

**TOWN OF ARLINGTON
MASSACHUSETTS**

INVITATION TO BID

**BID #18-20
BIORETENTION BASINS/EGERTON RD. &
HERBERT RD.**

Sealed bids for Bioretention Basins/Egerton Rd. & Herbert Rd. for the Town of Arlington, Massachusetts, will be received at the Purchasing Department, 730 Massachusetts Avenue, Arlington, MA 02476 until **10:00 AM prevailing time. on June 5, 2018** at which time and place said bids will be publicly opened and read aloud.

All bids must be in a sealed envelope plainly marked:

BID #18-20 BIORETENTION BASINS/EGERTON RD. & HERBERT RD.

Bid Security in the form of a bid bond, cash, certified check, treasurer's or cashier's check payable to the Owner, is required in the amount of five percent of the bid, in accordance with Section 00200, INSTRUCTIONS TO BIDDERS.

Contract Documents and plans will not be mailed.

Contract Documents and plans are available for down load and review on the Town Website:

www.arlingtonma.gov/purchasing

The selected contractor shall furnish a performance bond and a payment bond in amount at least equal to fifty percent (50%) of the contract price.

Minimum Wage Rates as determined by the Commissioner of the Division of Occupational Safety of the Executive Office of Labor and Workforce Development under the provisions of the Massachusetts General Laws Chapter 149, Section 26 to 27D, as amended, apply to this project.

All bids for this project are subject to applicable bidding laws of Massachusetts, including General Laws Chapter 30, Section 39M as amended.

The Bidder agrees that this bid shall be good and may not be withdrawn for a period of 30 working days, Saturdays, Sundays and legal holidays excluded after the opening of bids.

The Owner reserves the right to waive any informalities or to reject any or all bids.

TOWN OF ARLINGTON

Adam W. Chapdelaine
Town Manager

INSTRUCTIONS TO BIDDERS

- I. **COMPLEMENTARY DOCUMENT**
 - A. INVITATION TO BID, including herewith, is complementary to this document and shall be reviewed by bidder for specific instruction which are not repeated herein.
2. **STATUTES REGUALTING COMPETITIVE BIDDING**
 - A. Bidding procedures and award of general contract and subcontracts shall be in accordance with the provisions of Chapter 30, Section 39M and Chapter 149, Section 44A through 44L inclusive, of the General Laws of the Commonwealth of Massachusetts, including all current amendments.
 - B. In the event of any discrepancy or inconsistency between the provisions of these Bid and Contract Documents and the above-mentioned statutes, the provisions of the above-mentioned statutes shall govern. In such event, the application of all remaining provisions not in conflict to any circumstance other than that in which the conflict occurs shall not be affected thereby.
3. **BIDDER'S QUALIFICATIONS**
 - A. DCPO Certification not required.
 - B. The Contractors' Update Statements are not public records and will not be open to public inspection.
4. **INTERPRETATION OF DOCUMENTS: NOTIFICATION OF ERRORS**
 - A. Interpretations of the provisions of the Bid and Contract Documents will be made by the designer upon written request of any general bidder or sub-bidder, provided that such request is received by the Designer at least seven (7) days prior to the date of the applicable bid opening, and that the Designer considers such interpretation to be of sufficient importance. Oral or telephone interpretations will not generally be made, and if made shall be strictly informal and not legally valid or binding.
 - B. Such written interpretations shall be in the form of Addenda to the Bid and Contract Documents.
 - C. Bidders are urged to communicate all errors and discrepancies found in the Bid and Contract Documents to the Designer. Telephone calls pointing out any such errors or discrepancies will be taken by the Designer, but only for the purpose of receiving the information in order that it may be properly processed, and not for interpretation or clarification.
5. **EXAMINATION OF BIDDING AND CONTRACT DOCUMENTS**
 - A. Each Bidder shall carefully examine the Bid and Contract Documents to obtain a thorough understanding of the work of his bid in addition to the work of related trades. In addition, each General Bidder shall personally visit the

site to thoroughly acquaint himself/herself with the conditions as they exist here on.

- B. Failure of any Bidder to thoroughly examine the Bid and Contract Documents or to visit and examine the site shall in no way relieve him/her of any obligation with respect to his/her bid or of any responsibility assigned to him under the Contract.

6. PRE-BID CONFERENCE

- A. Pre-bid conference will be held at the location and time stipulated in the Invitation to Bid.

7. MODIFICATION AND WITHDRAWAL OF BIDS

- A. Modification of withdrawal of Bids will be permitted after the submission of such bids provided clearly written, readily understandable instructions for same are received by the Owner in writing prior to the time established for opening of such bids. No Bid may be withdrawn after that time, except as otherwise provided herein or by law.

8. ADDENDA

- A. Addenda may be required during the bidding period to modify, clarify or interpret the Bid and Contract Documents. It is intended, but not guaranteed, that such Addenda shall be mailed by the Owner to all persons or parties to whom Bid and Contract Documents have been issued (Bidders of Record). Failure to receive such Addenda shall in no way relieve any bidder from the execution of its provisions. All bidders are cautioned to verify the number of Addenda which have been issued and to secure any needed copies from the Designer before submitting a Bid.

9. FORM FOR BIDS

- A. The Owner will make available, to every person applying therefor, a Bid Form. Each bona fide Bidder will be furnished forms for his proposal upon request. Such forms will be made available at the Owner's office during the regular office hours throughout the bidding period. Bids must be submitted on the forms provided by Owner or of forms included in the bid documents of the Project Manual.
- B. All blank spaces provided on the bid forms shall be filled in with ink or typewriter. Where space is provided, sums shall be expressed in both words and figures. In case of a discrepancy between the two, the written words shall govern.
- C. No interlineations, additional, alterations or erasures shall be made on the forms.

10. ALTERNATES

- A. Not Applicable.

- B. General Bidders shall enter on the form for General Bid a single amount for each alternate, each amount to consist of the total of all the subbidders' amounts for the given alternate plus the amount of for work of the alternate to be performed by the General Contractor.
- C. If alternate(s) are accepted, they shall be accepted in the order listed. The low bidder will be determined on the basis of the sum of the Base Bid and the alternates accepted.

11. SUBMISSION OF BIDS

- A. The Bid Form shall be properly executed and enclosed with the required bid deposit in a sealed envelope plainly marked on the outside with the following information.

Bid For:

SUBMITTED BY:

(Name of Bidder)

(Address of Bidder)

- B. If Bids are mailed; the above required envelope shall be enclosed in a second envelope identified with the above markings and mailed to the place of bid opening, as described in the Invitation to Bid. Mailed Bids must be received before the time scheduled for opening of Bids.

12. PERFORMANCE AND PAYMENT BONDS

- A. Labor and Materials Payment Bond required of the General Contractor shall be in the amount of 50% of the contract sum from a surety company qualified to do business under the laws of the Commonwealth of Massachusetts and approved by the Owner.

13. FOREIGN CORPORATIONS

- A. The attention of bidders is called to General Laws, Chapter 30, Section 39L, as amended by Acts of 1967, Chapter 3, under which the Owner may not enter into a contract with a foreign corporation as a subcontractor unless the foreign corporation has filed with the Owner a certificate by the State Secretary stating that the foreign corporation has complied with General Laws Chapter 181, Sections 3 and 5 and stating the date of such compliance.

14. AWARD OF CONTRACT

- A. The Contract will be awarded to the lowest responsible and eligible bidder except in the event of a substitution as provided by under Chapter 149, Sections 44E and 44F of the above-reference General Laws.

15. COMMENCEMENT AND COMPLETION OF WORK

- A. The successful bidder, upon completion of the Contract Agreement, shall commence the work of the Contract within seven (7) calendar days from receipt of written Notice to Proceed issued by the Owner within fourteen (14) calendar days after said execution of the Contract Agreement, and shall therefore diligently and continuously carry on the work in such manner as to substantially complete the work as noted herein.

16. LIQUIDATED DAMAGES

- A. The attention of bidders is particularly called to the requirements as to the conditions of employment to be observed, the minimum wage rates to be paid under the Contract and affirmative action to ensure equal employment opportunity.

BID FORM

For: #18-20 Bioretention Basins/Egerton Rd. & Herbert Rd.

Proposal (BID) of _____
(hereinafter called "Bidder") a corporation, organized and existing under the laws of the Commonwealth of Massachusetts.

_____ doing business as _____
(corporation, proprietorship, partnership)
to the TOWN OF ARLINGTON hereinafter called "Owner".

Gentlemen:

A. The Bidder, in compliance with your invitation for bids for Bioretention Basins/Egerton Rd. & Herbert Rd., Arlington Massachusetts, having examined the plan and specifications with related documents and the site of the proposed project including the availability of materials and labor, hereby proposes to furnish all labor, materials and supplies, and to construct the project in accordance with the Contract Documents, within the time set forth therein, and at the prices stated below. These prices are to cover all expenses incurred in performing the work required under the Contract Documents, of which this proposal is a part.

Bidder hereby agrees to commence work under this Contract on or before a date to be specified in the written "Notice to Proceed" from the Owner, and to complete the work by November 30, 2018. The Bidder further agrees to pay as liquidated damages, the sum of \$100.00 for each consecutive calendar day thereafter that the work remains incomplete, as provided in the Instruction to Bidders, Modifications to General Conditions.

B. Bidder acknowledges receipt of the following addendum:

_____ Dated _____
_____ Dated _____
_____ Dated _____

C. Bidder agrees to perform all work described in the specifications and shown on the drawings, for the following lump sum price of:

1. Total Proposed Base Bid Contract Price:

_____ Dollars (\$_____)

D. If the Bid is accepted by the Owner, the undersigned agrees to complete the entire work provided to be done under the contract within the time stipulated by the Owner.

E. The undersigned agrees that for extra work, if any, performed in accordance with the AGREEMENT, he will accept compensation as stipulated therein in full payment for such extra work.

- F. Bidder understands that the Owner reserves the right to reject any and all bids.
- G. The undersigned hereby agrees that he will not withdraw the Bid within thirty (30) consecutive calendar days after the actual date of the opening of Bids and that, if the Owner accepts this Bid, the undersigned will duly execute and acknowledge the required Contract Bonds within 10 days after notification that the AGREEMENT is ready for signature.
- H. Should the undersigned fail to fulfill any of his agreements as here in before set forth, the Owner shall have the right to retain as liquidated damages the amount of the Bid security, which shall become the Owner/s property. If a bid was furnished as bid security, it is agreed that the amount thereof shall be paid as liquidated damages to the Owner by the Surety.
- I. The Undersigned certifies under penalty of perjury that this Bid is in all respect bona fide, fair and made without collusion or fraud with any other person. As used in this subsection the "person" shall men natural person, joint venture, partnership, corporation or other business or legal entity.
- J. The undersigned certifies that he is able to furnish labor that can work in harmony with all with all laws and regulations applicable to awards made subject forty-four A.
1. Have been in business under the present name for_____years.
 2. Ever failed to complete any work awarded?_____(Yes),_____(No). If yes, explain: _____
- K. The Bidder is required to state below all work he/she and his/her subcontractors (if subcontractors are to perform substantial portions of the work) has compete within the past 5 years of a similar character and value to that of the work included in the proposed Contract and to give references that will enable the Owners to judge the Bidder's experience, skill and business standing. The Bidder is required to list a minimum of 3 completed projects that are comparable in scope, complexity and value. For each project, include the name, location, type, date complete, construction value and owner contact.
- _____
- _____
- _____
- _____
- _____
- _____
- _____

(add supplementary page if necessary)

- L. The Bidder is required to state below all construction projects he/she currently has under contract. For each project, include the name, location, type, scheduled completion date, construction value and owner contact.

- M. The undersigned bidder hereby certifies that the tools and equipment required to meet the specified requirements of the Contract document, with special attention called to Section 02200 Earthwork, will be utilized in the performance of the work.

- N. The undersigned further certifies under the penalty of perjury that the said undersigned is not presently debarred from doing public construction work in the Commonwealth of Massachusetts under the provisions of section 29F, or any other applicable debarment provisions of any other chapter of the General Laws or any rule or regulation declared there under.

Date: _____

Name of General Bidder

By:

Name and Title of Person Signing Bond

Business Address

FORM A**CERTIFICATE OF NON-COLLUSION**

The undersigned certifies under penalties of perjury that this bid is in all respects bona fide, fair and made without collusion or fraud with any other person. As used in this section the word 'person' shall mean any natural person, joint venture, partnership, corporation or other business or legal entity.

Authorized Name

Authorized Signature

Date

Social Security Number or Federal Identification Number

Legal Name of Business Entity (Print or Type)

Address

City, State, Zip Code

Corporate Seal (If applicable)

FORM B

CERTIFICATE OF FOREIGN CORPORATION

The undersigned certifies that it has been duly established, organized, or chartered as a corporation under the laws of:

Jurisdiction

The undersigned further certifies that it complies with the requirements of M.G.L, c. 30, sec. 39L and with the requirements of M.G.L, c. 181 relative to the registration and operation of foreign corporations within the Commonwealth of Massachusetts.

Name of Person Signing the Bid or Proposal

Date

Signature of Person Signing the Bid or Proposal

Date

Name of Business (Print or Type)

Corporate Seal (If applicable)

FORM C

BIDDER CERTIFICATION REGARDING PAYMENT OF PREVAILING WAGES

The undersigned hereby certifies, under pains and penalties of perjury, that the foregoing bid is based upon the payment to laborers to be employed on the project of wages in an amount no less than the applicable wage rates established for the project by the Massachusetts Department of Labor and Industries. The undersigned bidder agrees to identify the awarding authority for, from, and against any loss, expense, damages, action, or claims, including any expense incurred in connection with any delay or stoppage of the project work, arising out of or as a result of (1) the failure of the said bid to be based upon the payment of the said applicable prevailing wage rates or (2) the failure of the bidder, if selected as the contractor, to pay laborers employed on the project the said applying prevailing wage rates.

Date

Name of Person Signing the Bid or Proposal

Signature of Person Signing the Bid or Proposal Title

Name of Business (Print or Type)

Corporate Seal (If applicable)

FORM D

CERTIFICATION OF PAYMENT OF STATE TAXES

Legislation enacted by the Commonwealth of Massachusetts, effective, 1983, requires that attestation below be signed:

Pursuant top M.G.L c. 62C, sec. 49A, I certify under the penalties of perjury, that I, to my best knowledge and belief, have filed all state tax returns and paid all state taxes required by law.

APPROVAL OF A CONTRACT OR ANY OTHER AGREEMENT WILL NOT BE GRANTED UNLESS THIS CERITIFCATION CLAUSE IS SIGNED BY AN AUTHORIZED CORPROATE OFFICER.

THE TAX PAYER IDENTIFICATION NUMBER WILL BE FURNISHED TO THE MASSACHUSETIS DPEARTMENT OF REVENUE TO DETERMINE IF TAX FILINGS AND/OR TAX PAYMENT OBLIGATIONS HAVE BEEN MET. PROVIDERS WHO FAIL TO CORRECT THIER NON-FILING AND/OR DELIQUENCY STATUS SHALL NOT HAVE A CONTRACT OR ANY OTHER AGREEMENT ISSUED, RENEWED OR EXTENDED

(Signature of Individual)

Title

Social Security Number or Federal Identification Number

Corporate Name

Name of Person Signing the Proposal (Print or Type)

Date

Legal Name of Business Entity (Print or Type)

Business Address

Corporate Seal (If applicable)



TOWN OF ARLINGTON
DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION
 51 GROVE STREET
 ARLINGTON, MA 02476

Item	Estimate		Description	Proposal	
	Quantity	Unit		Unit Price	Amount
1	2	EA	Drainage structure adjusted	\$ / EA	\$
2	1	EA	Modify drain structure	\$ / EA	\$
3	2	EA	Frame and grate	\$ / EA	\$
4	1	EA	Water gate box adjusted	\$ / EA	\$
5	19	LF	Underdrain lines	\$ / LF	\$
6	48	CY	Excavation	\$ / CY	\$
7	1	EA	Cleanout	\$ / EA	\$
8	3	CY	Pea stone – 3/8 inch	\$ /CY	\$
9	12	CY	3/4 inch stone	\$ /CY	\$
10	530	SF	Non-woven geotextile fabric – 6 oz.	\$ /SF	\$
11	40	SF	Concrete grid paver	\$ /SF	\$
12	9	SF	12"x12" concrete paver	\$ /SF	\$



TOWN OF ARLINGTON
DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION
51 GROVE STREET
ARLINGTON, MA 02476

13	1	CY	Riverstone	\$	/CY	\$
14	9	LF	Steel Edging	\$	/LF	\$
15	8	LF	Granite Curb Check Dam with Weir	\$	/LF	\$
16	16	CY	Bioretention Planting Soil	\$	/CY	\$
17	2	CY	Mulch	\$	/CY	\$
18	42	SY	Seeding	\$	/ SY	\$
19.01	30	EA	Butterfly Weed – Quart Container	\$	/ EA	\$
19.02	18	EA	Purple Cone Flower – Quart Container	\$	/ EA	\$
19.03	38	EA	Canada Rush - Quart Container	\$	/ EA	\$
19.04	18	EA	Gayfeather – Quart Container	\$	/ EA	\$
19.05	34	EA	Switchgrass - #2 Container	\$	/ EA	\$
19.06	40	EA	Black Eyed Susan - #1 Container	\$	/ EA	\$
19.07	41	EA	Little Bluestem – Quart Container	\$	/ EA	\$
19.08	1	LS	Watering Landscaping Planting During the 1-Year Guarantee Period	\$	/ LS	\$



TOWN OF ARLINGTON
DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION
51 GROVE STREET
ARLINGTON, MA 02476

20	4	EA	Erosion Control for Catch Basins	\$	/ EA	\$
				Total:		\$

Scope of Work

The Work under this Contract consists of furnishing all necessary labor, materials, equipment, & services required for the construction of two new bioretention basins on Egerton Road and Herbert Road in the Town of Arlington as indicated in Contract Documents. This work includes but is not limited to excavation for bioretention basin and subgrade preparation; installation of erosion control for catch basins, basin forebays, granite curb check dam, stone energy dissipators, geotextile, aggregates, planting soil, and plants; adjustment and remodeling of existing drainage structures and water gate valves; the application of loam and seeding to disturbed areas around the basins; and watering associated with a 1-year plant guarantee.

Work not included under this Contract includes furnishing and installation of curbing, concrete sidewalk, basin inlets, traffic delineators, pavement markings, relocation of signage, removal and replacement of pavement markings, and ADA curb ramps. The curbing, concrete sidewalk, basin inlets, and ADA curb ramps have already been completed under a separate contract by others.

The estimate total value of this contract is projected to be \$20,000. Quantities are estimated and are provided only for the purpose of comparing bids. The Town of Arlington reserves the right to increase or decrease the estimated total value of this contract without any changes in the Contractor's unit bid prices.

All items of work in this contract shall be in conformance with the "Commonwealth of Massachusetts, Highway Department (MHD) Standard Specifications for Highway and Bridges", dated 1988, including the latest supplements and addendum thereto; the 2017 Construction Standards; the Arlington DPW Design & Construction Standards, the 2009 Manual on Uniform Traffic Control Devices and addendum thereto; the 1990 Standard Drawings for Signs and Supports; the 1968 Standard Drawings for Traffic Signals and Highway Lighting; the American Standards for Nursery Stock (ANSI Z 60.1 - 1986); and these Special Provisions.

I. SPECIFICATIONS

1. Item 1: Drainage Structures Adjusted

1.1. Description

Work under this item includes adjusting the masonry of existing drainage structures, as required, to conform to newly proposed line and grade changes.

Work under this item shall be in conformance with section 220 of the Massachusetts Department of Transportation (MassDOT) Standard Specifications for Highways and Bridges (herein referred to as the MassDOT Standard Specifications). Existing casting removed shall be returned and delivered to a location determined by the Town Engineer.

1.2. Method of Measurement and Basis of Payment

The Drainage Structures Adjusted shall be measured in place by the unit each, complete and approved.

The drainage structures adjusted will be paid for at the contract unit price each under the item for Drainage Structures Adjusted. The unit bid price per each shall include all labor, materials and equipment necessary to complete the work as necessary or as directed by the Town.

Furnishing new casting will be paid for at the contract unit price each under the items for Frame and Grate.

The temporary setting of frames and grates to conform to the surface grade prior to the placing of the finish surface will not be separately measured for payment.

2. Item 2: Modify Drain Structure

2.1. Description

Work under this item shall include the modification of existing catch basins for the connection of proposed drain pipe/s. Non-shrink grout shall be used to ensure pipe connections to structure are water tight. Work under this item shall be in conformance with section 220 of the MassDOT Standard Specifications.

2.2. Method of Measurement and Basis of Payment

Remodel of Drain Structure shall be measured in place by the unit each, complete and approved.

The unit bid price per each shall include all labor, materials and equipment necessary to complete the work as necessary or as directed by the Town.

The temporary setting of gate boxes to conform to the surface grade and protection of the gate boxes prior to the placing of the finish surface will not be separately measured for payment.

3. Item 3: Frame and Grate

3.1. Description

Work under this item shall include the furnishing and installing beehive frames and grates at elevation as indicated on the plans or established by the Engineer. Work under this item shall be in conformance with section 220 of the MassDOT Standard Specifications.

References

American Society for Testing and Materials (ASTM): ASTM A48 Standard Specification for Gray Iron Castings

Submittals

Submit catalog cut for frames and grates including product data and dimensions.

3.2. Material

All castings for frames, covers and gratings shall conform to ASTM A48, Class No. 30. Grate style shall be beehive. All castings shall be rated "heavy duty" and as shown on the Contract Drawings.

3.3. Method of Measurement and Basis of Payment

Frame and Grate shall be measured per each installed complete in place.

Furnishing and installing of new Frames and Grates will be paid for at the contract unit price each. Payment shall include full compensation for all materials, transporting, protecting and installing the frame and grate, and for all equipment, tools, and labor incidental thereto.

The temporary setting of frames and grates to conform to the surface grade prior to the placing of the finish surface will not be separately measured for payment.

4. Item 4: Water Gate Box Adjusted

4.1. Description

Work under this item includes adjusting the existing water system gate boxes, as required, to conform to newly proposed line and grade changes.

Work under this item shall be in conformance with section 301 of the MassDOT Standard Specifications.

4.2. Method of Measurement and Basis of Payment

The Water Gate Box Adjusted shall be measured in place by the unit each, complete and approved.

The water gate boxes adjusted will be paid for at the contract unit price each under the item for Water Gate Box Adjusted. The unit bid price per each shall include all labor, materials and equipment necessary to complete the work as necessary or as directed by the Town.

5. Item 5: Underdrain lines

5.1. Description

Work under this item shall include the furnishing and installing 6-inch diameter perforated HDPE underdrain line with sealed cap with 1" orifice within the drain structure to the depth and lines indicated on the plans or established by the Engineer. Work under this item shall be in conformance with section 230 of the "Commonwealth of Massachusetts, Highway Department Standard Specifications for Highway and Bridges", dated 1988, including the latest supplements and addendum thereto.

References

American Association of State Highway and Transportation Officials (AASHTO) Publications.

Submittals

Submit descriptive literature showing pipe dimensions and other details for the pipe to be furnished for the project. All pipe furnished under the Contract shall be manufactured only in accordance with the specifications and the reviewed drawings.

5.2. Material

1. The single wall high density corrugated polyethylene highway pipe shall have annular interior and exterior corrugations. The pipe shall comply with the requirements for test methods, dimensions and markings found in AASHTO Designations M252. Pipe shall be made from virgin polyethylene compounds which conform to the applicable current edition of the AASHTO Material Specifications for cell classification as defined and described in ASTM D3350. Nominal sizes of 6-inch shall be AASHTO Type 'CP' with Class 2 slotted perforations.
2. Cap shall be ADS product FC POS 06 0000 end plug with gasket or approved equivalent. Underdrain extension shall be dual wall cleanout ADS 0674AG or approved equivalent.

5.3. Construction Method

The underdrain within the inlet structure shall be sealed with a cap with 1" orifice. Total extension on underdrain and cap assembly into inlet to be 3 inches from inlet wall to end of cap. 1 inch orifice to be drilled in cap.

5.4. Method of Measurement and Basis of Payment

Underdrain line shall be measured in place and the quantity to be paid for shall be the length constructed as directed within the limits specified.

Underdrain lines will be paid for at the contract unit price per lineal foot of the kind of pipe required, installed, and complete in place which shall include all labor, materials and equipment necessary to complete the work as necessary or as directed by the Town.

The cap assembly will not be separately measured for payment.

6. Item 6: Excavation

6.1. Description

Work under this item shall include the excavation for the bioretention basin and subgrade preparation. The excavation shall be made to the depth and lines indicated on the plans or established by the Engineer. This work also includes the disposal of surplus material. Work under this item shall be in conformance with Section 220 of the MassDOT Standard Specifications.

Quality Assurance

Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work under this item.

Codes and Standards

All materials, methods of construction and workmanship shall conform to applicable requirements of MassDOT Standard Specifications and AASHTO Standards, unless otherwise specified.

Project Conditions

1. Protection of Existing Site - Do not damage or disturb existing site features, utilities, or vegetation. Provide suitable protection where required before starting work and maintain protection throughout the course of the work.
2. Restore damaged site features, including existing paving on or adjacent to the site that has been damaged as a result of construction work, to their original condition or repair as directed to the satisfaction of the Owner, and authority having jurisdiction at no additional cost.

3. Safety and Traffic Control - Notify and cooperate with the Town when construction work will interfere with existing roads and traffic.
4. Provide temporary barriers, signs, warning lights, flagmen, and other protections as required to assure the safety of persons and vehicles around the construction area and to organize the smooth flow of traffic.

Erosion and Sediment Control Measures

1. All erosion and sediment measures must be installed prior to infiltration bed construction and maintained throughout project construction.
2. It is the contractor's responsibility to maintain job conditions to prevent the deposition of sediment on infiltration beds by wind-borne deposition, tracking, stormwater runoff, etc.
3. If job conditions arise that adversely affect the infiltration bed, additional measures such as access control during construction, vacuuming of impervious and pervious surfaces, or additional site stabilization may be required.

6.2. Construction Methods

General

1. Engineer shall be notified at least 24 hours prior to all bioretention basin work.
2. Permeability of the subgrade shall be confirmed by the Engineer. The Engineer reserves the right to perform additional permeability and compaction tests on the subgrade prior to installation of geotextile and aggregate.

Excavation Below Grade

1. Subgrade shall be unfrozen, firm, and stable with no standing water, mud, or muck. Temporary dewatering and drainage systems (if necessary) shall be in place and operational prior to beginning excavation.
2. If the Contractor fails to maintain the subgrade properly, the Contractor shall remove the unsuitable material at no additional cost to the Town. If the bottom of any excavation is taken out below the limits shown on the Drawings, it shall be restored at the Contractor's expense with six inch (6") layers of 3/4-inch aggregate to the elevations shown in the Drawings. Compacted earthen fill is not acceptable.
3. If in the opinion of the Engineer the undisturbed natural subgrade, at or below the normal grade of the excavation as indicated on the Drawings, is unsuitable for construction, it shall be removed to such depth and width as Engineer may direct and be replaced with suitable material as directed by Engineer. These activities, once authorized, shall be paid for at the prices bid for excavation and/or aggregate backfill.
4. Excavation shall be performed in the dry and shall be accomplished by methods which preserve the undisturbed state of subgrade soils. The existing subgrade shall not be compacted or subject to excessive construction equipment prior to placement of geotextile and crushed stone. If it is essential that equipment be used in the excavated area of the bioretention basin, all equipment must be approved by Engineer. Use of equipment with narrow tracks or tires, rubber tires with large lugs, or high pressure tires that will cause excessive compaction shall not be permitted within the excavation.

Subgrade Preparation and Grading

1. Subgrade of bioretention beds shall be level: Plus or minus one-half inch (+/- 1/2") is acceptable as level.
2. Grading shall be performed to the lines and grades shown on the Drawings. All objectionable material encountered within the limits indicated shall be removed and disposed of by the Contractor.

3. In excavation faces, all loose or protruding rocks shall be barred loose or otherwise removed to line or finished grade of slope. All cut and fill slopes shall be uniformly dressed to the slope, cross section, and alignment shown on the Drawings or as directed by Engineer.

Disposal of Unsuitable or Surplus Material

1. Excavated materials that will not be reused shall be removed from the site of the work and disposed of by the Contractor. Disposal of excavated materials shall be included in the price bid for excavation, and no additional payment shall be made for disposal of excavated materials regardless of class or condition.
2. Excavated material shall be stacked without excessive surcharge on the trench bank and without obstructing free access to utilities, private drives and public rights-of-way. Inconvenience to traffic and abutters shall be avoided as much as possible. Excavated material shall be segregated for use in backfilling as specified or shown on the Drawings, and protected.

Installation of Stone for Bioretention Basins

1. Non-woven geotextile, shall be placed immediately after approval of subgrade preparation. Subgrades shall not be subject to compaction during excavation or during installation of geotextile and aggregates. Subgrades shall be hand-raked (at least three inches) to scarify bottoms of bioretention basin prior to geotextile and aggregate placement. Any accumulation of debris or sediment which has taken place after approval of subgrade shall be removed prior to installation of non-woven geotextile at no extra cost to the Town.
2. Geotextile shall be placed in accordance with the non-woven geotextile item taking steps necessary to prevent any runoff or sediment from entering the trench.
3. Install coarse aggregate in six (6") maximum lifts refer to 3/4 inch stone and 3/8 inch pea stone items. Lightly compact each layer with equipment, keeping equipment movement on bed subgrades to a minimum. Install aggregate to grades indicated on the drawings. Once aggregate is backfilled and compacted to grades indicated on the Drawings, geotextile shall be folded over and overlapped on top of the bed temporarily to prevent soil intrusion into the aggregate bed until the bioretention planting soils can be installed.

6.3. Method of Measurement and Basis of Payment

Excavation will be measured per cubic yard of material removed.

Contractor shall be responsible for the cost of all additional excavation above and beyond these limits unless otherwise approved by the Engineer.

Excavation will be paid for at the contract unit bid price per cubic yard and shall include, all clearing and grubbing (except as may be otherwise provided on the plans or in the Specifications), disposal of surplus material, and the furnishing of all equipment, tools, labor, and work incidental thereto.

Backfilling when not obtained from excavation will be paid for at the contract unit price for the kind of material used.

7. Item 7: Cleanout

7.1. Description

Work under this item shall include the furnishing and installing a cleanout for the bioretention basin as indicated on the plans or established by the Engineer. Work under this item shall be in conformance with section 230 of the "Commonwealth of Massachusetts, Highway Department Standard Specifications for Highway and Bridges", dated 1988, including the latest supplements and addendum thereto.

References

American Society for Testing and Materials (ASTM) Publication: D3034 Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.

Submittals

Submit descriptive literature showing dimensions and other details for the cleanout to be furnished for the project. Cleanouts furnished under the Contract shall be manufactured only in accordance with the specifications and the reviewed drawings.

7.2. Material

The cleanout shall be PVC Pipe, SDR-35, ASTM D 3034, Type PSM. Cover shall be threaded PVC cap as indicated on Contract Drawings.

7.3. Construction Methods

Install the bioretention basin cleanout(s), when underdrain is necessary, with cap being visible above grade, and the other end of the cleanout pipe connecting with the underdrain. Cleanouts visible above finish grade in bioretention basins shall be painted black with an exterior paint for plastic surfaces.

7.4. Method of Measurement and Basis of Payment

Cleanout shall be measured per each installed complete in place.

Cleanout shall be paid for at the contract unit price per each. Payment at the unit price shall include full compensation for all labor materials, equipment and supervision to install a cleanout including wyees, fittings, pipe, and cap regardless of depth.

8. Item 8: Pea Stone – 3/8 Inch

8.1. Description

Work under this item shall include furnishing material and installing as choker, bedding, and joint fill material for the concrete grid pavers and bioretention basin as specified.

References

American Society for Testing and Materials (ASTM) Publication: D448 Standard Classification for Sizes of Aggregate for Road and Bridge Construction.

Submittals

Submit the name and address of the materials producer and the location from which the materials are to be obtained. Submit certificates, signed by the materials producer, stating that materials meet or exceed the specified requirement. Submit sample of for review and approval.

8.2. Material

Pea stone shall be double washed, conform to ASTM D 448, varying in size from 3/8 inch to No. 8 (No. 8 stone) and meet the following gradation requirements:

U.S. Standard	Percent Passing
<u>Sieve Size</u>	<u>by Weight</u>
1/2 inch	100
3/8 inch	85 - 100
#4	10 - 30

#8	0 - 10
#16	0 –5

8.3. Construction Methods

Install pea stone to depths and grades indicated on the Contract Drawings. Lightly compact each layer with equipment, keeping equipment movement on storage bed subgrades to a minimum.

8.4. Method of Measurement and Basis of Payment

Pea Stone – 3/8 Inch shall be measured in place and compacted, by the cubic yard. Measurements shall be based upon the depth, length, and width of the excavations.

Pea Stone – 3/8 Inch shall be paid for at the contract unit bid price per cubic yard complete in place which shall include all labor, materials and equipment necessary to complete the work as necessary or as directed by the Town.

9. Item 9: 3/4 Inch Stone

9.1. Description

Work under this item shall include furnishing material and installing as bioretention and concrete grid paver base.

Submittals

Submit the name and address of the materials producer and the location from which the materials are to be obtained. Submit certificates, signed by the materials producer, stating that materials meet or exceed the specified requirement. Submit sample of for review and approval.

References

MassDOT Standard Specifications

9.2. Material

1. All aggregates shall be double washed and meet the following:

Maximum Wash Loss of 0.5%

Minimum Durability Index of 35

Maximum Abrasion of 10% for 100 revolutions and maximum of 50% for 500 revolutions

2. Stone shall conform to MassDOT material specification M2.01.4 and shall meet the following gradation requirements:

U.S. Standard	Percent Passing
<u>Sieve Size</u>	<u>by Weight</u>
1 inch	100
3/4 inch	90 - 100
1/2 inch	10 - 50
3/8 inch	0 - 20
No. 4	0 – 5

9.3. Construction Methods

Install 3/4 Inch Stone to depths and grades indicated on the Contract Drawings. Lightly compact each layer with equipment, keeping equipment movement on storage bed subgrades to a minimum.

9.4. Method of Measurement and Basis of Payment

3/4 Inch Stone shall be measured in place and compacted, by the cubic yard. Measurements shall be based upon the depth, length, and width of the excavations.

3/4 Inch Stone shall be paid for at the contract unit bid price per cubic yard complete in place which shall include all labor, materials and equipment necessary to complete the work as necessary or as directed by the Town.

10. Item 10: Non-woven Geotextile Fabric – 6 oz.

10.1. Description

Work under this item shall include furnishing material and installing as separation fabric along the sides of the excavation for the bioretention basin and concrete grid pavers.

Submittals

1. One 18 inch x 18 inch panel of geosynthetic material for inspection. The sample panel shall be uniformly rolled and shall be wrapped in plastic to protect the material from moisture and damage during shipment. Sample shall be externally tagged for easy identification. External identification shall include: name of manufacturer; product type; product grade; lot number; and physical dimensions.
2. Submit the name and address of the material producer and the location from which the materials are to be obtained.
3. Submit certificates, signed by the material producer, stating that material meets or exceeds the specified requirements.

References

1. American Society for Testing and Materials (ASTM):
 - a. D3787: Bursting Strength of Knitted Goods (CRT) Ball Burst Test.
 - b. D4355: Deterioration of Geotextiles from Exposure to Ultraviolet Light and Water (Xenon-Arc Type Apparatus).
 - c. D4491: Water Permeability of Geotextiles by Permittivity
 - d. D4632: Braking Load and Elongation of Geotextiles
 - e. D4833: Standard Test Method for Index Puncture Resistance of Geomembranes and Related Products.
 - f. D5261: Standard Test Method for Measuring Mass per Unit Area of Geotextiles.
2. MassDOT Standard Specifications

10.2. Material

1. Non-woven geotextile fabric shall be composed of polypropylene fibers, which are formed into a stable network such that the fibers retain their relative position. The fabric shall be inert to biological degradation and resist naturally encountered chemicals, alkalis, and acids.
2. Provide a non-woven geotextile conforming to the following properties:

<u>Property</u>	<u>ASTM Test Method</u>	<u>Values</u>
Grab strength	D 4632	150 lbs. min.
Mullen burst strength	D 3786	250 psi min.
Puncture strength	D 4833	90 lbs. min.
Flow Rate	D 4491	110 gal/min/ft ² min.
UV Resistance (at 500 hours)	D 4355	70% min.
<u>Physical Properties</u>	<u>ASTM Test Method</u>	<u>Value</u>
Weight	D 5261	6.0 oz. min.

10.3. Construction Methods

1. Owner's Representative and Engineer shall be notified at least 24 hours prior to all bioretention basin work.
2. Permeability of the subgrade shall be confirmed by Engineer and reserves the right to perform additional permeability and compaction tests on the subgrade prior to installation of geotextile and aggregate.
3. Subgrade of bed shall be level: Plus or minus one-half inch (+/- 1/2") is acceptable as level.
4. Grading shall be performed to the lines and grades shown on the Contract Drawings. All objectionable material encountered within the limits indicated shall be removed and disposed of by the Contractor.
5. In excavation faces, all loose or protruding rocks shall be barred loose or otherwise removed to line or finished grade of slope. All cut and fill slopes shall be uniformly dressed to the slope, cross section, and alignment shown on the Contract Drawings or as directed by Engineer.
6. Non-woven geotextile shall be placed immediately after approval of subgrade preparation. Subgrades shall not be subject to compaction during excavation or during installation of geotextile. Subgrades shall be hand-raked (at least three inches) to scarify bottoms of bed prior to geotextile placement. Any accumulation of debris or sediment which has taken place after approval of subgrade shall be removed prior to installation of non-woven geotextile at no extra cost to Town.
7. Geotextile shall be placed in accordance with manufacturer's standards and recommendations. Adjacent strips of geotextile shall overlap a minimum of twelve inches (12") or per manufacturer specifications, whichever is greater. Secure non-woven geotextile at least four feet (4') outside of trench and take steps necessary to prevent any runoff or sediment from entering the trench.

10.4. Method of Measurement and Basis of Payment

Non-woven geotextile fabrics will be measured, in place, by square foot. Measurements shall be made by the Engineer. Measurements shall be based upon the height, length, and width of the bed/trench. The bed/trench height, length, and width shall not exceed the limits set forth in in the Contract Drawings.

Non-woven geotextile fabrics will be paid for at the Contract unit price which shall constitute full compensation for complete compliance with this Item, including all labor, material, equipment, tools, incidental work and construction methods.

All geotextile fabric materials shall be new.

No payment shall be made for the furnishing of fabrics to line any excavations beyond the limits set forth in the Contract Drawings.

11. Item 11: Concrete Grid Paver

11.1. Description

Work under this item consists of furnishing and construction of a Concrete Grid Pavers in accordance with these specifications and in reasonably close conformity with the lines, grades, design, and dimensions shown on the plans.

Related Items

Item 8: Pea Stone – 3/8 Inch for bedding course and opening filler material

Item 9: 3/4 Inch Stone for base course

Item 10: Non-woven Geotextile Fabric – 6 oz.

Submittals

1. Samples for verification: Three representative full-size samples of paver.
2. Accepted samples become the standard of acceptance for the product produced.
3. Test results from an independent testing laboratory for compliance of concrete pavers with ASTM C 1319 or other applicable requirements.
4. Manufacturer's catalog product data, installation instructions, and material safety data sheets for the safe handling of the specified materials and products.

Quality Assurance

Obtain Permeable Pavers from one source location with the resources to provide products of consistent quality in appearance and physical properties.

Delivery, Storage & Handling

1. Comply with Manufacturer's ordering instructions and lead time requirements to avoid construction delays.
2. Coordinate delivery and grid paver schedule to minimize interference with normal use of buildings adjacent to paving.
3. Contractor shall check all materials upon delivery to assure that the proper materials have been received and are in good condition before signing off on the manufacturer's packing slip.
4. Contractor shall protect all materials from damage or contamination due to jobsite conditions and in accordance with manufacturer's recommendations. Damaged or contaminated materials shall not be incorporated into the work.
5. Deliver concrete grid pavers to the site in steel banded, plastic banded, or plastic wrapped cubes capable of transfer by fork lift or clamp lift. Unload and store concrete grid pavers at job site in such a manner that no damage occurs to the product.
6. Handle and transport aggregates to avoid segregation, contamination and degradation. Keep different materials sufficiently separated as to prevent mixing. Do not dump or store one material on top of another unless it is part of the installation process. Cover material with waterproof covering to prevent exposure to rainfall or removal by wind; secure the covering in place.

Project/Site Conditions

1. Do not install during heavy rain, freezing conditions or snowfall.
2. Do not install on frozen soil subgrade.

3. Do not install frozen bedding course sand, joint fill or base course material.

Maintenance

Contractor to provide any extra or remaining product to Owner for maintenance and repair. Store concrete grid paver materials in Owner designated location.

11.2. Material

Concrete Grid Paver

1. The concrete grid paver product to be provided shall be Turfstone or approved equal with the following dimensions:
 - a. Concrete grid paver product size shall be 15-3/4" x 23-5/8".
 - b. Concrete grid paver thickness shall be 3-1/8".
2. Suppliers:
 - a. Unilock New England, 35 Commerce Dr., Uxbridge, MA 01569, 508-278-4536
 - b. Pavers by Ideal, 55 Power Road, P.O. Box 747, Westford, MA 01886, 978-692-3076
 - c. Anchor North, 46 Spring Street, Holbrook, MA 02343, 781-767-2202
3. Concrete Grid Pavers shall conform to the following requirements set forth in ASTM C-1319:
 - a. Measured length or width of test specimens shall not differ by more than +/- 0.125 in from approved sample, while measured thickness shall not differ by more than +/- 0.125 in from the specified standard dimensions
 - b. Average compressive strength of 5,000 psi (35 MPa) with no individual unit under 4,500 psi (31 MPa) when tested in accordance with ASTM C-140.
 - c. Maximum water absorption of 10 pounds/cubic foot with no unit greater than 12 pounds/cubic foot when tested in accordance with ASTM C-140.
4. Pigment in Concrete Pavers shall conform to ASTM C-979.

Bedding Course

Refer to Item 8: Pea Stone – 3/8 Inch

Joint Fill

Refer to Item 8: Pea Stone – 3/8 Inch

Base Course

Refer to Item 9: 3/4 Inch Stone

Geosynthetics

Refer to Item 10: Non-woven Geotextile Fabric – 6 oz.

11.3. Construction Methods

Installation Base Course

1. Install geosynthetic (i.e. geotextile) as required in accordance with the specifications and Contract Drawings. The geotextile is applied to the sides of the excavation with overlapping joints a minimum of 12 inches. Overlaps to follow down slope.

2. Install the Base Course at the thickness, compaction, surface tolerances, and elevations outlined in the specifications.
 - a. The aggregate should be spread and compacted in uniform layers not exceeding 6-inch loose thickness.
 - b. Compact the Base Course to at least 95 percent as per ASTM D 4254 to depths as indicated.
 - c. Density testing shall be conducted to verify conformance.
 - d. Surface tolerance should be plus or minus 3/8 in. (10 mm) over a 10 ft. (3 m) straight edge laid in any direction.
 - e. Attention will be paid to providing proper compaction near curbs, concrete collars around utility structures, and other protrusions as applicable to the project.
3. Before commencing the placing of the Bedding Course, the base shall be inspected by the Engineer.

Installation Bedding Course, Concrete Grid Pavers and Joint Fill

1. Spread the Bedding Course evenly over the Base Course at the thickness, compaction, surface tolerances, and elevations outlined in the specifications. Compact the Bedding Course to at least 95 percent as per ASTM D 4254 to depths as indicated.
2. Ensure that concrete grid pavers are free of foreign material before installation. Concrete grid pavers shall be inspected for color distribution and all chipped, damaged or discolored concrete grid pavers shall be replaced. Installation of concrete grid paver in place shall be deemed to represent acceptance of the concrete grid pavers.
3. Lay the concrete grid pavers in the pattern(s) as shown on the Contract Drawings. Maintain straight pattern lines.
4. Joints between the individual concrete grid pavers, and between concrete grid pavers and buildings, collars, or other protrusions/edging, on average shall be between 1/8 in. and 1/4 in. (3 mm to 6 mm) wide.
5. Fill gaps at the edges of the paved area with cut grid pavers.
6. Cut all grid pavers using a masonry saw. Upon completion of cutting, the area must be swept clean of all debris to facilitate inspection and to ensure the Concrete Grid Pavers are not damaged during compaction.
7. Using a low amplitude plate compactor capable of at least 4,000 lbs. (15 kN) compaction at a frequency of 75 hz –100 hz, compact the Concrete Grid Pavers into the Bedding Course. A rubber or neoprene pad between the compactor and Concrete Grid Pavers may be necessary to prevent cracking and chipping.
8. The grid pavers shall be compacted to achieve consolidation of the sand bedding and brought to level and profile by not less than three passes. Initial compaction should proceed as closely as possible following the installation of the grid paving units and prior to the acceptance of any traffic or application of joint fill.
9. Any units that are structurally damaged during compaction shall be immediately removed and replaced.
10. Spread joint filler material into the joints and openings, then vibrate, until the material is within 1/2 inch (13 mm) of the top surface throughout. This will require at least two or three passes with the compactor. Do not compact within 3 ft (1 m) of the unrestrained edges of the grid paving units.
11. The final surface elevations shall not deviate more than 3/8 in. (10 mm) under a 10 ft (3 m) long straightedge.

11.4. Method of Measurement and Basis of Payment

Concrete Grid Paver shall be measured in place by the square feet. Measurements shall be based upon the length, and width of the placed pavers.

Concrete Grid Paver shall be paid for at the contract unit bid price per square feet complete in place which shall include all labor, materials and equipment necessary to complete the work as necessary or as directed by the Town.

12. Item 12: 12"x12" Concrete Paver

12.1. Description

Work under this item consists of furnishing and construction of a 12"x12" Concrete Pavers in accordance with these specifications and in reasonably close conformity with the lines, grades, design, and dimensions shown on the plans.

Related Items

Item 8: Pea Stone – 3/8 Inch for bedding course

Submittals

1. Samples for verification: One representative full-size sample of paver.
2. Accepted sample become the standard of acceptance for the product produced.
3. Test results from an independent testing laboratory for compliance of concrete pavers with ASTM C 936 or other applicable requirements.
4. Manufacturer's catalog product data, installation instructions, and material safety data sheets for the safe handling of the specified materials and products.

Quality Assurance

Obtain Permeable Pavers from one source location with the resources to provide products of consistent quality in appearance and physical properties.

Delivery, Storage & Handling

1. Contractor shall check all materials upon delivery to assure that the proper materials have been received and are in good condition before signing off on the manufacturer's packing slip.
2. Contractor shall protect all materials from damage or contamination due to jobsite conditions and in accordance with manufacturer's recommendations. Damaged or contaminated materials shall not be incorporated into the work.
3. Unload and store concrete pavers at job site in such a manner that no damage occurs to the product.
4. Handle and transport aggregates to avoid segregation, contamination and degradation. Keep different materials sufficiently separated as to prevent mixing. Do not dump or store one material on top of another unless it is part of the installation process. Cover material with waterproof covering to prevent exposure to rainfall or removal by wind; secure the covering in place.

Project/Site Conditions

1. Do not install during heavy rain, freezing conditions or snowfall.
2. Do not install on frozen soil subgrade.
3. Do not install frozen bedding course material.

12.2. Material

Concrete Paver

1. Concrete paver product size shall be 12" x 12".
2. Concrete paver thickness shall be 2".
3. Color shall be gray.
4. Concrete Pavers shall conform to the following requirements set forth in ASTM C-936:
5. Pigment in Concrete Pavers shall conform to ASTM C-979.

Bedding Course

Refer to Item 8: Pea Stone – 3/8 Inch

12.3. Construction Methods

Installation Bedding Course

Install the Base Course at the thickness, compaction, surface tolerances, and elevations outlined in the specifications.

1. The aggregate should be spread and compacted to 4" thickness.
2. Compact the Base Course to at least 95 percent as per ASTM D 4254 to depths as indicated.
3. Density testing shall be conducted to verify conformance.
4. Surface tolerance should be plus or minus 3/8 in. (10 mm) over a 10 ft. (3 m) straight edge laid in any direction.
5. Attention will be paid to providing proper compaction near curbs, concrete collars around utility structures, and other protrusions as applicable to the project.

Before commencing the placing of the Bedding Course, the base shall be inspected by the Engineer.

6. Ensure that concrete pavers are free of foreign material before installation. Concrete pavers shall be inspected for color distribution and all chipped, damaged or discolored concrete pavers shall be replaced. Installation of concrete paver in place shall be deemed to represent acceptance of the concrete pavers.
7. Lay the concrete pavers hand tight in the pattern(s) as shown on the Contract Drawings. Maintain straight pattern lines.

12.4. Method of Measurement and Basis of Payment

12"x12" Concrete Paver shall be measured in place by the square feet. Measurements shall be based upon the length, and width of the placed pavers.

12"x12" Concrete Paver shall be paid for at the contract unit bid price per square feet complete in place which shall include all labor, materials and equipment necessary to complete the work as necessary or as directed by the Town.

13. Item 13: Riverstone

13.1. Description

Work under this item shall include stone energy dissipators at basin inlets and riverstone at granite curb check dams as indicated on the Contract Drawings.

13.2. Material

Riverstones shall conform to MassDOT M2.02.4 gradation and include a mix of riverstones 4-8" in size, double-washed, generally rounded, semi-smooth, gray in color with color relatively uniform and shall be subject to the approval of the Engineer.

13.3. Method of Measurement and Basis Payment

Riverstone shall be measured per cubic yard installed complete in place. Riverstone shall be paid for at the contract unit bid price per cubic yard complete in place which shall include all labor, materials and equipment necessary to complete the work as necessary or as directed by the Town.

14. Item 14: Steel Edging

14.1. Description

Work under this item shall include steel edging for the riverstone at granite curb check dams as indicated on the Contract Drawings.

14.2. Material

Steel Edging shall be heavy duty steel 2.5 mm thick and 125 mm depth (5") and powder coated black

14.3. Method of Measurement and Basis Payment

Steel Edging shall be measured per linear feet installed complete in place. Steel edging shall be paid for at the contract unit bid price per linear feet complete in place which shall include all labor, materials and equipment necessary to complete the work as necessary or as directed by the Town.

15. Item 15: Granite Curb Check Dam with Weir

15.1. Description

Work under this item shall include granite for the granite curb check dam with weir as indicated on the Contract Drawings.

15.2. Material

Provide granite conforming to MassDOT Specifications Section M9.04.0.

Bottom and top surface shall be sawn to an approximately true plane, having no projections or depressions greater than 0.125 inches. Top shall be thermal finished.

Front face and back shall be at right angles to the planes of the top and ends, and shall be smooth quarry split, free from drill holes and with no projection of more than 1 inches, and no depression of more than 1/2 inches, measured from the vertical plane of the face through the arris line for a distance down from the top of 18 inches.

The ends of the stone shall be squared with the planes of the top and face so that when the stones are placed end to end as closely as possible, no space shall show in the joint at the top and face of more than 1/4 inches, for the full width of the top and for 18 inches down on the face. The arris formed by the intersection of the plane of the joint with the planes of the top and exposed faces shall have no variation from the plane of the top and exposed faces greater than 1/8 inches.

If sawed, the curbstones shall be thoroughly cleaned of any iron rust or iron particles by sand blasting or other approved methods, satisfactory to the Engineer, and any conspicuous saw marks shall be removed with a peen hammer.

Granite curb check dam with weir shall be set in a concrete base. Concrete shall be a zero-slump concrete, 4000 psi, 3/4 inches aggregate concrete mix.

15.3. Construction Method

Install granite curb check dam as indicated on the Drawings. Set in concrete base. Set curb vertically true. Set to the line and grade indicated on the Drawings.

The joints between the pieces of curbing on both sides shall be carefully filled with cement mortar and neatly pointed on the top and exposed portions.

After pointing, clean all excess mortar on the face and top.

15.4. Method of Measurement and Basis Payment

Granite curb check dam with weir shall be measured per linear feet installed complete in place. Granite curb check dam with weir shall be paid for at the contract unit bid price per linear feet complete in place, including concrete base, cement grout jointing, furnishing granite curb with weir and equipment necessary to complete the work as necessary or as directed by the Town.

16. Item 16: Bioretention Planting Soil

16.1. Description

The work of consists of providing all labor, equipment, materials, incidental work, and construction methods necessary to supply and place planting soils as indicated on the Contract Documents and as specified.

Supplying and placement of planting soils shall include, but not be limited to:

1. Protection and delivery of stockpiles
2. Modifying, screening, manufacture, sampling, and testing of Bioretention Planting Soils.
5. Placing, spreading and grading of Bioretention Planting Soils as required.

References:

1. American Society for Testing and Materials (ASTM): D75, D422, D1557, D2434, C33
2. A.O.A.C.: Association of Official Agricultural Chemists.
3. USDA, MADEP Bio Solids Reference Sheets.
4. The Soil Science Society of America, Methods of Soil Analysis, most current edition, United States Composting Council www.compostingcouncil.org and http://compostingcouncil.org/admin/wp-content/plugins/wp-pdfupload/pdf/191/LandscapeArch_Specs.pdf.
5. United States Department of Agriculture, Natural Resources Conservation Service,
6. National Soil Survey Handbook, title 430-VI.
http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/survey/?cid=nrcs142p2_054242

Sampling, Testing, and Submittals:

At least 30 days prior to ordering materials, the Contractor shall submit to the Engineer samples, certifications, manufacturer's product data and certified test results for materials. No materials shall be ordered or delivered until the required submittals have been reviewed and approved by the Engineer. Delivered materials shall closely match the approved samples. Approval shall not constitute final acceptance. The Engineer reserves the right to reject, on or after delivery, any material that does not meet these Specifications.

Examination of Conditions:

Confirm that the subgrade is at the proper elevation and that no further earthwork is required to bring the subgrade to proper elevations. Perform no work of placing and spreading of planting soils until elevations have been confirmed and accepted by the Engineer.

Quality Assurance

1. Planting Soils Supplier: Soil mixes shall be supplied by a firm that specializes in the production of mixes of planting soils and have at least 5 years experience in providing soil mixes soils to projects of similar size and scope to this Contract.
2. Soil Testing Laboratory Qualifications: The testing laboratory shall specialize in agricultural soil testing and be a member of the Soil Science Society of America's, North American Proficiency Testing Program (NAPT). Testing results for soil particle size shall be reported using USDA sizes for sand, silt, and clay.

Delivery, Handling and Storage

1. Weather: do not mix or deliver soil when frozen or muddy
2. Planting soil delivered to the site shall be protected from weather, erosion, chemicals, dust and debris at all times. materials shall be spread immediately. Otherwise, materials that stored on site for more than 24 hours shall be covered with tarpaulin or other soil erosion system acceptable to the Engineer.

16.2. Materials

1. Bioretention Soil shall be loam borrow amended for planting stormwater management areas.
2. Bioretention Soil shall have a sandy loam/loamy sand texture per USDA textural triangle. Maximum clay content is 5%. The soil shall be a uniform mix, free of stones, stumps, roots or other similar objects larger than 1 inch in diameter. No other materials or substances shall be mixed or dumped with the Bioretention Basin Soil that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations. The planting soil shall be free of Bermuda Grass, Quackgrass, Johnson Grass, Mugwort, Nutsedge, Poison Ivy, Canadian Thistle, Tearthumb, or other noxious weeds.
3. Planting soil components for the Bioretention Basin Soil shall have the following grain and size distribution for material passing the #10 (2.0 mm) sieve:

<u>Sieve No.</u>	<u>Sieve Size (mm)</u>	<u>Percent Passing by Weight</u>	
		<u>Maximum</u>	<u>Minimum</u>
10	2	-----	100
18	1	100	95
35	0.5	91	85
60	0.25	80	70
140	0.10	60	50
270	0.05	50	30
	0.002	5	2

4. Maximum size shall be one and one quarter inches largest dimension. The maximum retained on the #10 sieve shall be 25% be weight of the total sample.
5. Bioretention Basin Soil shall have the following values:

6. Infiltration rate of Bioretention Basin Soil shall range between 3" and 5" per hour. Adjustments to the infiltration rate can be made by adding or subtracting the #200 sieve size material.
7. Compaction rate shall be 75% of maximum dry density to replicate typical field conditions of a lightly compacted basin that is not subject to foot traffic.
8. In addition to soil testing requirements outlined above, Bioretention Soil shall be laboratory tested for infiltration rate using ASTM D 2434 Constant Head Permeability Test. Infiltration rate will be converted to inches/hour and will be tested with sample at 95% compaction. Professional testing laboratories that provide this service include Geo Testing Express, Inc. 125 Nagog Park, Acton, MA 01720, 978-635-0424, www.geocomp.com and American Engineering & Testing Inc., 14 Rocsam Park Road, Braintree, MA 02184, 781-848-5184, www.americanetestingne.com or approved equal.
9. Materials for the amending and manufacturing of Bioretention Soil that remain stockpiled on site for more than 24 hours shall be treated to prevent erosion.

1. Soil additives shall be used to counteract soil deficiencies as recommended by the soils analysis and as supplements for lawn construction as specified herein.
2. Acidulant for adjustment of loam borrow pH shall be commercial grade flours of sulfur, ferrous sulfate, or aluminum sulfate that are unadulterated. Acidulants shall be delivered in unopened containers with the name of the manufacturer, material, analysis and net weight appearing on each container.
3. Ground limestone for adjustment of loam borrow pH shall contain not less than 85 percent of total carbonates and shall be ground to such fineness that 40 percent will pass through 100 mesh sieve and 95 percent will pass through a 20 mesh sieve. Contractor shall be aware of loam borrow pH and the amount of lime needed to adjust pH to meet the requirements of the testing lab recommendations.
4. Organic component of the manufactured loam borrow shall be compost. Compost shall be a stable humus-like material produced from the aerobic decomposition of organic residues. The residues, if biosolids, shall consist of compost meeting MA-DEP Type 1 requirement or approved equal. The residues shall be dark brown or black in color, with no visible free water or dust and no unpleasant odor, meeting the following criteria certified by the producer.

- | | |
|---|--|
| a. Carbon-nitrogen ratio | Minimum 10:1 Maximum 25:1 |
| b. Stability CO2 evolution test or Dewar self-heating test or | <10 mg CO2 - C/g BVS/day
<10 degrees C above room temp. |
| c. Woods End Laboratory's Compost Test Kit | |
| d. organic content | 40 percent minimum dry weight (Loss on Ignition; minus #10 Sieve, 430 degrees C) |
| e. particle size | 90 percent passing 0.5 inch screen, 100 |

- | Sieve No. | Sieve Size (mm) | Percent Passing by Weight | |
|-----------|-----------------|---------------------------|---------|
| | | Maximum | Minimum |
| 4 | 4.8 | ----- | 100 |
| 10 | 2 | 100 | 80 |
| 18 | 1 | 86 | 58 |
| 35 | 0.5 | 50 | 18 |
| 60 | 0.25 | 24 | 7 |
| 140 | 0.10 | 0 | 10 |
| 270 | 0.05 | 0 | 4.5 |
| | 0.002 | 0 | 0.3 |
- a. The ratio of the particle size for 70% passing (D₇₀) to the particle size for 20% passing (D₂₀) shall be 4.0 or less. (D₇₀/D₂₀ < 4.0)

1. Do not damage the work previously installed. Maintain all required angles of repose of materials adjacent to the planting soils as shown on the Contract Documents. Do not over excavate compacted subgrades of adjacent pavement or structures during the installation of planting soils.
2. Confirm that the subbase is at the proper elevation and that no further earthwork is required to bring the subgrade to proper elevations. Perform no work of placing and spreading of planting soils until elevations have been confirmed by the Engineer.
3. Clear the subbase of all construction debris, trash, rubble and any foreign material. In the event that fuels, oils, concrete washout or other material harmful to plants have been spilled into the subgrade material, excavate soil sufficiently to remove the harmful material. Such construction debris, trash, rubble and foreign material shall be removed from the site and disposed of in a legal manner. Fill any over excavation with approved fill and compact to the required subgrade compaction levels.
4. Do not proceed with the installation of planting soils until all utility work in the area has been installed.
5. Protect adjacent walls, walks and utilities from damage or staining by planting soils. Use 0.5-inch plywood and or plastic sheeting as directed to cover existing concrete, metal and masonry work and other items as directed during the progress of the work. Clean up all trash and any soil or dirt spilled on any paved surface at the end of each working day.

Installation of Planting Soils:

1. Immediately prior to dumping and spreading planting soils, the subgrade shall be cleaned of all debris or rubbish. Such material shall be removed from the site, not raked to the edges and buried.
2. Planting soil delivered to the site shall be protected from erosion at all times. Materials shall be spread immediately. Otherwise, materials that stored on site for more than 24 hours shall be covered with tarpaulin or other soil erosion system acceptable to the Engineer.
3. No planting soil shall be handled, planted, or seeded in any way if it is in a wet or frozen condition. A moist loam borrow is desirable.
4. Soil additives shall be spread and thoroughly incorporated into the layer of planting soil by harrowing or other methods reviewed by the Engineer. The following soil additives shall be incorporated:
 - a. Ground limestone or acidulant as required by soil analysis to achieve the required pH as described in this Section. Spread limestone at the rate required by soil analysis up to a maximum limit of 200 pounds per 1,000 square feet.
 - b. Biosolid compost, sand or other soil amendments as required by soil analysis.
5. After planting soils and required additives have been spread, carefully prepare the planting soils by scarifying, harrowing, or tilling the soil to integrate soil additives into the top 6 inches of the soil. Remove all large stiff clods, lumps, brush, roots, stumps, litter and other foreign matter. Remove from unscreened soils all stones over 1 inch in diameter from the top 6 inches of the planting area. Planting soils shall also be free of smaller stones in excessive quantities as determined by the Engineer.
6. Sufficient grade stakes shall be set for checking the finished grades. Stakes must be set in the bottom of swales and at the top of slopes. Deviation from indicated elevations that are greater than one-tenth of a foot shall not be permitted. Connect contours and spot elevations with an even slope. Finish grades shall be smooth and continuous with no abrupt changes at the top or bottom of slopes.
7. During the compaction process, all depressions caused by settlement or rolling shall be filled with additional planting soils and the surface shall be regraded and rolled until presenting a smooth and even finish corresponding to the required grades.
8. The Contractor shall install the planting soils in successive horizontal lifts no thicker than 12 inches in plant bed areas to the desired compaction as described in this Section. The Contractor shall install the soil at a higher level to anticipate any reduction of planting soil volume due to settling, erosion, decomposition, and other similar processes during the warranty period. The Engineer will ensure that the full 18 inches of planting soil are obtained by digging holes in the placed soils at the same frequency as for compaction testing.
9. Select equipment and otherwise phase the installation of the planting soils to ensure that wheeled equipment does not travel over subsoil, placed fills or ordinary borrow or already installed soil. Movement of tracked equipment over said soils will be reviewed and considered for approval by the Engineer.
10. Compact each lift sufficiently to reduce settling but not enough to prevent the movement of water and feeder roots through the soil. The planting soils in each lift should feel firm to the foot in all areas and make only slight heel prints. At completion of the planting soils installation, the soil should offer a firm, even resistance when a soil sampling tube is inserted from lift to lift. After the placement of each lift, perform percolation tests to determine if the

soil has been over compacted. Perform the following percolation test procedure:

- a. Dig a hole in the installed soil that is a minimum of 4 inches in diameter. Holes in 12-inch lifts in plant beds shall be 8 inches deep. Do not penetrate through the lift being tested.
 - b. Fill the hole with water and let it drain completely. Immediately refill the hole with water and measure the rate of fall in the water level.
 - c. In the event that the water drains at a rate less than one inch per hour, till the soil to a depth required to break the over compaction.
 - a. Perform a minimum of one soil percolation test per 2,500 square feet of planting area as directed by the Engineer.
11. Compaction of bioretention basin soils: Compact each lift of Bioretention Basin Soils to 75% of maximum Standard Proctor density according to ASTM D 698.
 12. Contractor shall be responsible for maintaining all stockpiles of planting soils on the site until final placement. Upon written approval by the Engineer, Contractor shall remove all excess, unused planting soils and material excavated from the site and dispose of it in a legal manner.

Acceptance of Final Grades:

Confirm that the final grades of the planting soils are at the proper finish grade elevations. Adjust grade as required to meet the contours and spot elevations noted on the Plans. Request the presence of the Engineer to inspect final grade. Do not proceed with the remaining work of this Contract until the Engineer has given his/her written approval of the final grade.

Field Quality Control of Bioretention Basin Soils

Testing Agency: Engage a qualified testing agency to perform tests and inspections.

Perform the following tests and inspections:

1. Compaction: Test bioretention basin soil compaction after placing each lift and at completion of each Bioretention Basin using a densitometer or soil-compaction meter calibrated to a reference test value based on laboratory testing according to ASTM D 698.

Protection of Planting Soils

1. Protect areas of on-place soil from additional compaction, disturbance, and contamination. Prohibit the following practices within these areas except as required to perform planting operations:
 - a. Storage of construction materials, debris, or excavated materials.
 - b. Parking vehicles or equipment.
 - c. Vehicular, pedestrian, and animal traffic.
 - d. Excavation or other digging unless otherwise indicated.
2. If planting soils or subgrade are over-compacted, disturbed or contaminated by foreign or deleterious materials or liquids, remove the soil media and contamination; restore the subgrade as directed by the Engineer, and replace contaminated planting soils with new planting soils.

16.4. Method of Measurement and Basis Payment

Bioretention planting soil shall be measured in units of cubic yards complete in place, in accordance with the Contract Drawings, as specified herein and as directed by the Engineer.

Bioretention planting soil shall be paid for at the contract unit price per cubic yard. The unit price for planting soils shall be full compensation for all labor tools, equipment, materials, transport, testing, and all

incidental labor and materials necessary to complete the work as specified herein, as directed by the Engineer, and as shown and detailed on the Contract Drawings.

17. Item 17: Mulch

17.1. Description

The work of consists of providing all labor, equipment, materials, incidental work, and construction methods necessary to supply and place mulch as indicated on the Contract Documents and as specified.

Submittals

At least **30 days prior to ordering materials**, the Contractor shall submit to the Engineer samples, certifications, manufacturer's product data and certified test results for materials as specified below. No materials shall be ordered or delivered until the required submittals have been reviewed and approved by the Engineer. Delivered materials shall closely match the approved samples. Approval shall not constitute final acceptance. The Engineer reserves the right to reject, on or after delivery, any material which does not meet these Specifications.

17.2. Materials

1. Mulch shall be high quality, shredded or double-ground, premium pine bark mulch consisting of clean, organic plant material.
2. Shall be dark brown and uniform in color. The composition of the shredded pine bark material shall not exhibit a noticeable degree of any color change characteristics when wet.
3. The mulch must be free of dirt, insects, disease and extraneous debris that would be harmful to all trees being installed.
4. The shredded pine bark mulch material shall not have an unpleasant odor.
5. Bark Mulch shall be a well-graded material conforming to the following:
 - a. pH between 4.0 – 8.0
 - b. Particle size 100% passing a 50mm (2 inch) screen
 - c. Soluble salt content < 4.0 mmhos/cm

17.3. Construction Method

Mulch as shown on the Contract Drawings. Mulch material shall be placed over entire planting beds to a depth of 2 inches after settlement, not later than one week after planting. Do not apply mulch prior to the first watering of plant materials. Do not apply mulch prior to placement of surface applied fertilizer and comprehensive soil inoculant with verification of placement by the Engineer.

17.4. Method of Measurement and Basis Payment

Mulch shall be measured in units of cubic yards complete in place, in accordance with the Contract Drawings, as specified herein and as directed by the Engineer.

Mulch shall be paid for at the contract unit price per cubic yard. the unit price for mulch shall be full compensation for all labor, tools, equipment, materials, and transport necessary to complete the work as specified herein, as directed by the Engineer, and as shown and detailed on the Contract Drawings.

18. Item 18: Seeding

18.1. Description

Work under this item shall include seeding areas disturbed due to excavation and other construction activities and other areas and indicated on the Contract Drawings. Contractor is responsible to restore this area back to preconstruction conditions and as indicated on the Contract Drawings. Work under this item shall be in conformance with section 765 of the MassDOT Standard Specifications.

18.2. Method of Measurement and Basis of Payment

The quantity of seeding shall be the number of square yards based on actual measurements made over the general contour of the areas seeded, complete in place, and accepted.

This work, including all mowing, will be paid for at the contract unit price per square yard under the item for Seeding, complete in place. When a satisfactory stand of grass has not been established at the time of acceptance, no payment for seeding shall be allowed at the time of acceptance. At the time the final estimate is ready to be forwarded to the Contractor the seeded areas will again be inspected by the Engineer and if a satisfactory stand of grass has been established, the seeded areas with satisfactory stand of grass will be included for payment.

19. Item 19.01 Butterfly Weed – Quart Container

Item 19.02 Purple Cone Flower – Quart Container

Item 19.03 Canada Rush - Quart Container

Item 19.04 Gayfeather – Quart Container

Item 19.05 Switchgrass - #2 Container

Item 19.06 Black Eyed Susan - #1 Container

Item 19.07 Little Bluestem – Quart Container

Item 19.08 Watering Landscaping Planting During the 1-Year Guarantee Period

19.1. Description

The work of this Section consists of providing all labor, equipment, materials, incidental work, and construction methods necessary to perform planting work and related items as indicated on the Contract Drawings and as specified in this Section and includes, but is not limited to, herbaceous plantings, grades and standards of plants, root systems for all plants, comprehensive soil inoculant, water, and limestone.

19.2. Material

Herbaceous Containerized Plants and Plugs

1. Species as noted and specified in the plant schedule. no cultivars shall be used unless otherwise indicated in the plant schedule, or as approved by the Engineer.
2. All herbaceous containerized plants and plugs shall meet the following standards:
 - a. Herbaceous plantings shall be healthy and well cared for, with no evidence of insects or diseases present. Insect-ridden or diseased plants shall be rejected. Plants shall have a deep green foliage and dense, compact growth. Herbaceous plantings shall have multi-stemmed bases and shall be two year potted stock minimum, one year in cutting bench and one year in pots.

Soil Additives

Soil additives shall be specified, provided, installed and paid for under the item for bioretention planting soil.

Grades and Standards of Plants

1. The Contractor shall furnish all plants shown on the Contract Documents, as specified, and in quantities listed on the plant schedule. No substitutions will be permitted, without written approval by the Engineer. All plants shall be nursery grown unless specifically authorized to be collected as noted on the plant schedule.
2. All plants shall be typical of their species or variety and shall have a normal habit of growth and be legibly tagged with the proper name. Only plant stock grown within Hardiness Zones 1 through 6b, as established by the USDA Plant Hardiness Zone Map, latest edition, will be accepted.
3. Plants shall be in accordance with ASNS Standards of the American Association of Nurserymen except as noted in this Section. Botanical plant names shall be in accordance with plant designations included in Hortus III.

Root Systems for All Plants

1. Each plant shall have an extensive, symmetrically balanced fibrous root system. Any root ball which shows signs of asymmetry, injury, or damage to the root system shall be rejected.
2. Curling or spiraling of the roots along the walls of rigid containers will not be accepted.
3. All parts of the fibrous root system of all plants shall be moist and fresh with a white color when washed of soil. When the plant is removed from the container, the visible root mass shall be healthy with white root tips. The root systems of all plants shall be free of disease, insect pests, eggs, or larvae.
4. The diameter and depth of the balls of earth must encompass the fibrous and root feeding system necessary for the healthy recovery of the plant. Minimum root ball diameters and depths shall be in accordance with ASNS standards.
5. No plants shall be loose in the container.
6. Container grown plants which have roots growing out of the container will be rejected.
7. Contractor shall be responsible for removing by hand any weeds or non-specified plant species from root balls and containers prior to completing any planting.

Planting Soil Mix

Planting soil mix shall be an approved amended native soil specified, provided, installed and paid for under Bioretention Planting Soil.

Soil Additives

Soil additives shall be specified, provided, installed and paid for under the item for Bioretention Planting Soils.

Comprehensive Soil Inoculant

1. The comprehensive soil inoculant shall contain a combination of mycorrhizal fungi, beneficial rhizosphere bacteria, hydrogels, humic acids and various microbial nutrients. Each packet shall contain a dry, water-soluble granular material and shall consist of the following:
2. Mycorrhizal fungal inoculant shall be:
 - a. Live spores of VA Endomycorrhizal fungi: Vesicular-Arbuscular mycorrhizae (VAM) fungi, minimum of four (4) species.
 - b. Live spores of Ectomycorrhizal fungi, including *Pisolithus tinctorius*.

3. Biostimulant shall contain beneficial rhizosphere bacteria (*Bacillus licheniformis*, *Bacillus megaterium*, *Bacillus polymyxa*, *Bacillus subtilis*, *Bacillus thuringiensis*, *Paenibacillus azotofixans*), humic acids, microbial nutrients (maltodextrin, seaweed and yeast extracts) and inert ingredients.
4. Comprehensive Soil Inoculant shall be:
 - a. PHC Tree Saver Transplant, as manufactured by Lebanon Seaboard Corporation, www.LebanonTurf.com.
 - b. Diehard Transplant, as manufactured by Horticultural Alliance, Inc., www.horticulturalalliance.com.
 - c. WSM (Water Soluble Mycorrhizae), as manufactured by ENP Investments, www.enpturf.com.

Mulch

Mulch shall be specified, provided, installed and paid for under the item for Mulch.

Water

The Contractor shall be responsible to furnish his own supply of water to the site at no extra cost. If possible, the Owner shall furnish the Contractor upon request with an adequate source and supply of water at no charge. However, if the Owner's water supply is not available or not functioning, the Contractor shall be responsible to furnish adequate supplies, hoses and other watering equipments at his own cost. All work injured or damaged due to the lack of water, or the use of too much water, shall be the Contractor's responsibility to correct.

B. Water furnished by the Contractor will be free of ingredients harmful to humans and plant life.

Limestone

Ground limestone for adjustment of loam borrow pH shall contain not less than 85 percent of total carbonates and shall be ground to such fineness that 40 percent will pass through 100 mesh sieve and 95 percent will pass through a 20 mesh sieve. Contractor shall be aware of loam borrow pH and the amount of lime needed to adjust pH to specification in accordance with testing lab recommendations.

19.3. Construction Methods

Planting

1. Furnishing and planting of plant material shall include, but shall not be limited to, the digging of planting pits and plant beds, provision of soil additives required to adjust for pH requirements of specific plants, furnishing the plants as specified as well as the labor of planting, fertilizing, and maintenance.
2. Prior to spreading of bioretention soil and stone, subgrade material shall have been inspected by the Engineer to determine if they are too compact to drain water as specified or are consist of a poorly draining soil.
3. The Contractor shall locate plant material sources and ensure that plants are shipped in timely fashion for installation.
4. Contractor shall locate all existing underground utilities that are within 10 feet of the proposed planting pits and notify the Engineer of any conflicts prior to digging plant pits.
5. Seasons for Planting:
 - a. Spring: Deciduous materials - March 31 through June 15; Evergreen materials - April 27 through June 15.

- b. Fall: Deciduous materials – August 15 through October 1; Evergreen materials - August 15 through October 1.
6. Plant Material Inspection:
- a. At least one month prior to the expected planting date, the Contractor shall request that the Engineer provide a representative to select and tag stock to be planted under this section. The Contractor shall pay for the transportation, subsistence and overnight accommodations, if necessary, for the Engineer's representative during the period of time required to select and tag the plant material.
 - b. The Contractor shall be responsible to certify the availability of quality plants in specified sizes from his/her sources of supply prior to requesting that the Engineer make plant source inspections. In the event that plants at the inspection location are found to be unavailable or of insufficient size, the Contractor shall be liable to reimburse the Owner for all costs of the Engineer's hourly services which are incurred during unproductive inspection trips.
 - c. Unless specifically designated otherwise, a representative of the Contractor shall accompany the Engineer on all plant material selection field trips.
 - d. Representative samples only of ground cover plants may be tagged or marked for approval as an "Approved Typical Sample" and shipped to the site. Any groundcover plant that arrives at the construction site that does not meet the Approved Typical Sample will be rejected by the Engineer.
 - e. Inspection and approval of plants at the source shall not impair the right of subsequent inspection and rejection upon delivery to the site, or during the progress of the work if the Engineer finds that plants do not meet the requirements of the PLANT SCHEDULE or this Contract, have declined noticeably due to handling abuse, lack of maintenance, or other causes. Cost of replacements, as required, shall be borne by the Contractor.
7. Placement of planting soil shall be specified, performed and paid for under the work of the Bioretention Planting Soil item of this Specification. Obtain Engineer's written approval of work of rough grading and finish grading prior to starting the work of planting.
8. Planting:
- a. Notify the Engineer three working days prior to the proposed arrival of plant material on the site. If not planted within 4 hours of delivery to the site, all plants shall be maintained in an on-site nursery. Container grown shrubs stored on site shall be shaded from direct sunlight at all times and shall not be stored directly on paved surfaces. All plants delivered to the site and not planted within 4 hours of delivery shall have their root balls covered with mulch and shall be watered on a daily basis such that root balls are kept moist throughout.
 - b. Locations for all plants and outlines for planting areas shall be staked on the ground by the Contractor for approval by the Engineer before any plant pits or plant beds are dug. Notify the Engineer no less than 3 days prior to desired date of inspection of staking to schedule site visit.
 - c. All plant pits dug with a machine shall have the sides of the holes scraped with hand shovels to prevent glazing or compaction of the sides of the hole. Remove and stockpile excavated loam for reuse as backfill for plant pit. All subsoil excavated from the bottoms of planting pits shall be removed from the site.
 - d. Plant pits shall be dug to the dimensions shown on the Contract Drawings.
 - e. Herbaceous material beds shall be dug to a continuous depth of 1 foot below final grade, or as shown on the Contract Drawings. Place sufficient planting soil mix to provide 1 foot deep beds. Remove groundcover and perennials from their pots immediately before planting. Handle plants carefully to prevent damaging roots. Place each plant in individual hole and firm the planting mix

around the roots. Water thoroughly and mulch as shown on the Contract Drawings. Groundcover plants may be planted after the planting mulch is placed.

- f. All plant roots and earth balls must be damp and thoroughly protected from sun and wind from the beginning of the digging operation, during transportation, and at the site until the final planting.
 - g. Remove container plants from containers prior to planting.
 - h. Contractor shall 'butterfly' the root system for all container grown perennials immediately prior to planting them. Butterflying shall consist of vertically cutting the containerized root ball with a spade through the bottom half of the rootball followed by gently pulling the rootball open at the cut while placing it into the planting hole. The butterflied root system shall be placed over a small ridge of soil in the planting pit in order to assure as much soil to root ball contact as possible and to keep the halves apart.
 - i. Existing loam excavated from the planting pit and new loam meeting the requirements of the specifications shall be reused for backfilling the rootball. Existing loam and new loam shall be wedged under the curve of the rootball sufficiently to support the rootball and to keep the trunk of the tree plumb during planting soil placement. Under no circumstances shall depth of backfilled material be such that the remaining volume left for backfilling the planting soil is less than 18 inches. Do not use excavated subsoil in backfill.
 - j. Planting soil shall be backfilled in layers of not more than 6 inches. Compact each layer of planting soil by foot tamping prior to placing next layer of planting soil backfill. Eliminate all air pockets in the backfill material. Enough planting soil shall be used to bring the finished surface of the planting pit to 2 inches above finished grade at plant stem when planting soil backfill has settled.
 - k. Do not apply any soluble fertilizer to plantings during the first year after transplanting unless soil test determines that fertilizer or other chemical additives is required. Apply chemical additives only upon the approval of the Engineer.
 - l. Comprehensive soil inoculant shall be applied according to the manufacturer's instructions and standard horticultural practices.
 - m. All plants shall be watered immediately following planting as necessary to thoroughly moisten rootball and plant pit loam and thereafter shall be inspected frequently for watering needs and watered, as required, to provide adequate moisture in the planting pit.
9. Mulch shall be placed as indicated under the mulching item.
10. In the event that rock or underground construction work or obstructions are encountered in any plant pit or bed excavation work, alternate locations will be selected by the Engineer. Relocation of plant pits or beds shall be provided at no additional cost to the Owner. Provide the Engineer with no less than 48 hours' notice of obstruction so that a site visit can be scheduled to establish new locations for plants.
11. Absolutely no debris may be left on the site. Repair any damage to site as directed by the Engineer, at no additional cost.
12. All replacements shall be plants of the same kind and size specified in the PLANT SCHEDULE. The cost shall be borne by the Contractor, except for possible replacements due to vandalism or neglect on the part of others.

Plant Maintenance:

Maintenance shall begin immediately after each plant is planted and shall continue for a minimum 30-day Monitoring Period and until the end of the fall planting season following Final Acceptance.

- 1. Watering landscape plantings during the 1-year guarantee period: Plants shall be inspected for watering needs at least twice each week and watered to promote plant growth and vitality. The following

watering rates assume that the soil is free draining. If the on-site conditions do not ensure a free draining soil, then notify the Engineer in writing of this condition. Watering rates for perennials in free draining soils are presented here as guidelines to ensure that the top six inches of plant bed soil remains moist at all times. Actual watering rates may vary depending upon soil conditions. Guideline rates shall be as follows:

<u>Type of Plant/Size</u>	<u>Weekly Watering Rate</u>
---------------------------	-----------------------------

Herbaceous Plantings:	5 gallons
-----------------------	-----------

Water shall be applied by 1-inch diameter hose with an attached metering gauge.

2. Planting beds shall be kept free of weeds, and mulch shall be replaced as required to maintain the specified layer of mulch. Beds and individual pits shall be neat in appearance and maintained to the designed layout.
3. Plants that die during the maintenance period shall be removed and replaced by the Contractor within one week of notification and replaced during that growing season, unless directed otherwise by the Engineer.
4. Spraying of insecticides or herbicides shall be done by State-licensed professionals. Spraying for insects, pests and diseases shall conform to the National Arborist Association Standards under the section entitled "Standards for Pesticide Application Operations", as currently adopted and as approved by the Engineer. All insecticides, pesticides, and herbicides shall be EPA-approved and shall conform to the requirements MCRG: Massachusetts Control Recommendation Guide for Insect, Disease, and Weed Pests of Shade Trees and Woody Ornamentals, latest edition, University of Massachusetts, Amherst, College of Food and Natural Resources.
5. Work of pruning, spraying, and similar activities shall be undertaken only by Certified Arborists and licensed chemical applicators, as pertinent to the work being performed.
6. During the maintenance period, any decline in the condition of plantings shall require the Contractor to take immediate action to identify potential problems and undertake corrective measures. If required, the Contractor shall engage professional arborists and/or horticulturalists to inspect plant materials and to identify problems and recommend corrective procedures. The Engineer shall be immediately advised of such actions. Inspection and recommendation reports shall be submitted to the Engineer.

Plant Acceptance:

1. Upon completion of all planting work, the Contractor shall request in writing that the Engineer formally inspect the planting work.
2. If plant materials and workmanship are acceptable, the Engineer will issue a written Certificate of Conditional Acceptance to the Contractor.
3. Following the issuance of the Certificate of Conditional Acceptance to the Contractor, the Contractor shall maintain the plants for a minimum 30-day Monitoring Period. At the end of the Monitoring Period, the plant material will be inspected by the Engineer to determine whether or not all planting work has been performed to the requirements of this specification.
4. Acceptance Standards at end of the Monitoring Period: If plant material is reviewed when it is in full leaf, leaves shall be plump with water with a shape indicative of the species and shall be free of insect, pest and disease damage. Twigs shall have living cambium for their full length. Twigs and branches shall have a full bud set for their full length, including terminal buds. Trunks and branches shall be free of frost cracks; sun scald; damage due to insects, pests, and disease; structural defects; and damage resulting from machinery or tools. Plant material inspected and reviewed when the plants are not in full leaf shall have twigs, branches and trunks meeting the above requirements. All plants regardless of the season of review

shall have a minimum of 75 percent healthy, balanced branching structure with a healthy terminal leader(s) with viable terminal bud(s).

5. If any numbers of plants do not meet these Acceptance Standards at the time of inspection, or if in the Engineer's opinion, workmanship is unacceptable, written notice will be given by the Engineer to the Contractor in the form of a punch list, which itemizes necessary planting replacements and/or other deficiencies to be remedied. The Contractor's responsibility for maintenance of all plants shall be extended until replacements are made or other deficiencies are corrected. All plants that do not meet these Acceptance Standards shall be removed from the project within seven days of receipt of the punch list. Replacements shall conform in all respects to the Specifications for new plants and shall be planted in the same manner
6. Following the correction of all Punch List deficiencies, the Contractor shall request in writing that the Engineer formally inspect the planting work. If plant materials and workmanship are acceptable, the Engineer will issue a written Certificate of Final Acceptance to the Contractor.

Plant Guarantee

1. The date of the Certificate of Final Acceptance shall establish the beginning of the maintenance period and the commencement of the required one (1) year guarantee and establishment period for planting work.
2. At the end of the guarantee and establishment period, a final inspection will be held to determine whether any plant material replacements are required. Each plant shall be plumb, shall have a character that is natural for its species as determined by the Engineer, and shall conform to the Acceptance Standards described in this specification. Plants found to be unacceptable shall be removed promptly from the site and replaced according to this specification. A final inspection will be made after the replacement plants have lived through one year.

Clean-up

1. Remove soil or similar material which has been brought onto paved areas, keeping these areas clean. Upon completion of planting, remove excess soil, stones and debris which have not previously been cleaned up and legally dispose of off-site.
2. Prepare planting areas for final inspection. Protect slopes and embankments against erosion until work is accepted.

19.4. Method of Measurement and Basis of Payment

Measurement for payment for all plants in Bioretention Basins shall be for each plant as shown in these Contract Documents or as otherwise approved by the Engineer.

Watering during the 1-year Guarantee Period shall be measured as a lump sum.

Payment for all plants in Bioretention Basins shall be based on price per each. Under the Unit Price for these items, the Contractor shall furnish all labor, materials, tools, equipment, and incidentals required. The work includes but is not limited to: preparation of planting soil; furnishing, placing and planting containerized plants; furnishing and applying fertilizer and comprehensive soil inoculants; weeding, re-mulching, and replacement/protection of planted areas during the establishment period.

Watering will be paid for at the Contract as a lump sum. The unit price for Watering during the 1-year Guarantee Period shall be full compensation for all labor, tools, equipment, materials, transport and all incidental labor and materials necessary to complete the work, including furnishing and delivering water, and watering for the 1-year guarantee period, as specified herein and as directed by the City Arborist or Engineer.

No separate payment shall be made for any labor, equipment, and materials incidental to work of this Contract, including other tasks necessary to complete the work of this Section.

Payment for Planting Soils and mulch shall not be paid for under this item and are paid for elsewhere.

20. Item 20: Erosion Control for Catch Basins

20.1. Description

The work under this item shall consist of installing catch basin inserts prior to starting construction and maintaining those inserts in working order for the duration of construction.

Catch basin inserts shall be installed at each catch basin within the limit of work and at the first catch basin downstream of the limit of work (along each curb line) or as directed by the Engineer. Also included is removal of the inserts at completion of the work.

20.2. Materials

Sediment control fabric for catch basin insert shall be UV resistant woven polypropylene fabric and must be manufactured to fit catch basin opening.

1. Fabric shall have a minimum Grab Strength of 265 lbs., minimum puncture of 120 lbs, and permittivity of 0.5 to 1.5 sec-1.
2. Sediment control fabric must have integral lifting system to aid removing the fabric from the drain structure.

20.3. Construction Method

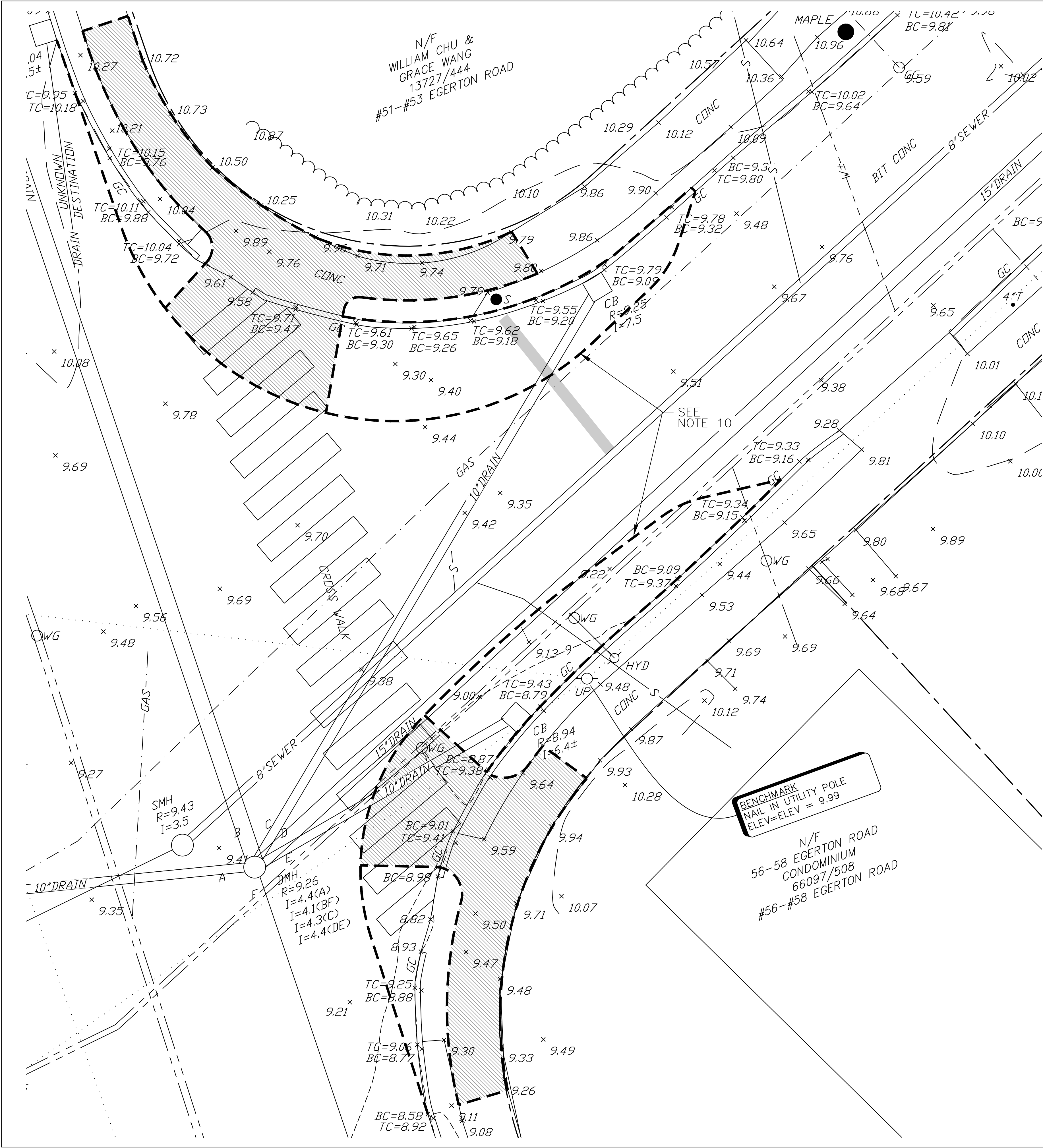
Erosion control devices shall be installed, inspected and approved by the Engineer prior to the start of work.

Maintenance and Removal of Erosion Control Devices

1. Check sediment in catch basins biweekly and after each rain event of one half inch or greater. Empty sediment control fabric in catch basins when $\frac{3}{4}$ full.
2. Maintain erosion control devices in place and in effective condition.
3. The Contractor shall perform all operations and maintenance for erosion control in accordance with all local, state and federal requirements and the construction documents.

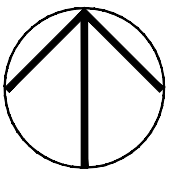
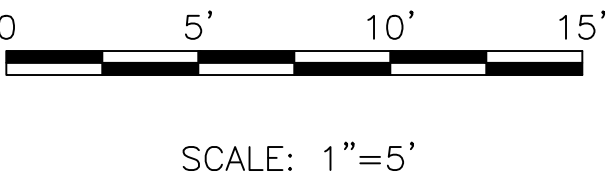
20.4. Method of Measurement and Basis of Payment

Inserts will be measured per each catch basin and will be paid at the contract unit price bid per each insert which price shall include all labor, tools, equipment, materials, and incidental expenses necessary to complete these items to the satisfaction of the Engineer. All debris accumulated shall be handled and disposed of as part of this item.



LEGEND:	
ADJ	ADJUST
BIT CONC	BITUMINOUS CONCRETE
BC	BOTTOM CURB
CB	CATCH BASIN
CONC	CONCRETE
DMH	DRAIN MANHOLE
EX	EXISTING
GC	GRANITE CURB
HYD	HYDRANT
I=	INVERT=
LP	LIGHT POLE
P	POST
PB	PULL BOX
R=	RIM=
S	SIGN
TC	TOP CURB
UP	UTILITY POLE
WG	WATER GATE
12" T	12" TREE
-----	EXISTING OVERHEAD WIRES
=====	EXISTING WATER LINE
==10" DRAIN==	EXISTING DRAIN LINE
==8" SEWER==	EXISTING SEWER LINE
==8" DRAIN==	EXISTING DRAIN LINE
----	EXISTING GAS LINE
□	EXISTING CATCH BASIN
○	EXISTING MANHOLE

- NOTES:
- ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), AND WERE DETERMINED BY GPS OBSERVATIONS AND AN OPUS REDUCTION ON 6/9/2017 BY PRECISION LAND SURVEYING, INC.
 - THIS PLAN AND THE SURVEY ON WHICH IT WAS BASED WERE PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND ARE SUBJECT TO THE FINDINGS SUCH A REPORT MAY DISCLOSE.
 - PROPERTY LINES WERE NOT INVESTIGATED AS A PART OF THE CURRENT WORK EFFORT.
 - THE AREA SHOWN HEREON IS LOCATED IN FLOOD ZONE X (SHADED) AS SHOWN ON THE FLOOD INSURANCE RATE MAP MIDDLESEX COUNTY, MASSACHUSETTS, MAP NUMBER 25017C0419E, EFFECTIVE DATE: JUNE 4, 2010.
 - UNDERGROUND UTILITIES WERE COMPILED FROM AVAILABLE RECORD PLANS OF UTILITY COMPANIES AND PUBLIC AGENCIES AND ARE APPROXIMATE ONLY. BEFORE DESIGN AND CONSTRUCTION CALL "DIG SAFE" 1-888-344-7233. SOME DATA IS CONFLICTING AND CAN ONLY BE VERIFIED BY EXCAVATION.
 - UTILITY REFERENCES:
 - NATIONAL GRID (GAS) GIS SHEETS ARL-M1235
 - TOWN OF ARLINGTON WATER LINE PLAN L.S. 72
 - TOWN OF ARLINGTON STORM DRAIN PLAN 1303 & 1709
 - TOWN OF ARLINGTON SEWER ASSESSMENT EGERTON RD. 2260
 - THE CONTRACTOR SHALL FIELD VERIFY CONDITIONS AND DIMENSIONS PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES TO THE ENGINEER.
 - WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY SHALL BE APPROPRIATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION.
 - ALL UTILITY COMPANIES, PUBLIC AND PRIVATE, MUST BE NOTIFIED, INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THIS PLAN, PRIOR TO EXCAVATING, BLASTING, INSTALLING, BACKFILLING, GRADING, PAVEMENT RESTORATION OR REPAVING.
 - APPROXIMATE LOCATION OF NEW CURB, SIDEWALK, AND ADA CURB RAMPS, INSTALLED BY TOWN ENGINEER IN NOVEMBER 2017



EGERTON ROAD
GREEN INFRASTRUCTURE IMPROVEMENTS
ARLINGTON, MA
BID DOCUMENTS

27 Congress Street, Suite 508
Salem, MA 01970

Client:

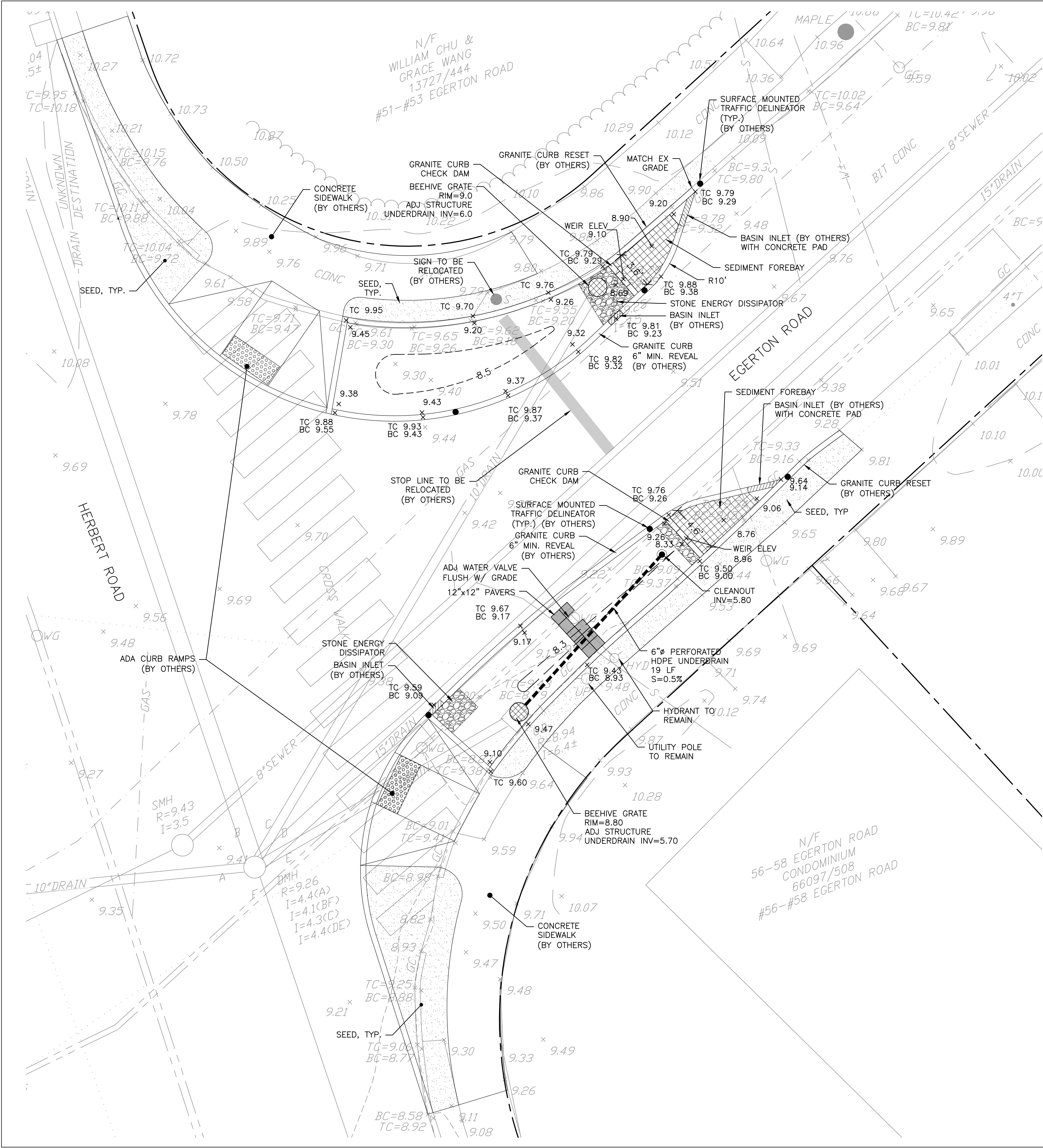
Mystic River Watershed Association
20 Academy Street, Suite 306
Arlington, MA 02476

Owner: Town of Arlington
730 Massachusetts Ave.
Arlington, MA 02476

Issue Date: March 8, 2018
Drawn By: HH
Rev'd By: DB/EA

Sheet Title:
EXISTING
CONDITIONS
PLAN

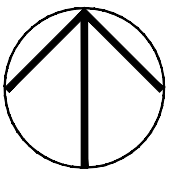
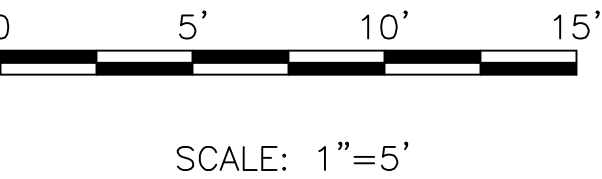
Sheet No:
C-0



LEGEND:

ADJ	ADJUST
BIT CONC	BITUMINOUS CONCRETE
BC	BOTTOM CURB
CB	CATCH BASIN
CONC	CONCRETE
DMH	DRAIN MANHOLE
EX	EXISTING
GC	GRANITE CURB
HYD	HYDRANT
I=	INVERT=
LP	LIGHT POLE
P	POST
PB	PULL BOX
R=	RIM=
S	SIGN
TC	TOP CURB
UP	UTILITY POLE
WG	WATER GATE
12" T	12" TREE
-----	EXISTING OVERHEAD WIRES
-----	EXISTING WATER LINE
==10" DRAIN==	EXISTING DRAIN LINE
==8" SEWER==	EXISTING SEWER LINE
==8" DRAIN==	EXISTING DRAIN LINE
-----	EXISTING GAS LINE
□	EXISTING CATCH BASIN
○	EXISTING MANHOLE
=====	GRANITE CURB (SEE NOTE 12)
-----	6"Ø PERFORATED UNDERDRAIN
●	CLEANOUT
⊗	DOMED GRATE OVERFLOW
⊘	STONE DISSIPATOR
⊞	OPEN CELL CONCRETE PAVER
■	12"x12" CONCRETE PAVER

- NOTES:**
- ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), AND WERE DETERMINED BY GPS OBSERVATIONS AND AN OPUS REDUCTION ON 6/9/2017 BY PRECISION LAND SURVEYING, INC.
 - THIS PLAN AND THE SURVEY ON WHICH IT WAS BASED WERE PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND ARE SUBJECT TO THE FINDINGS SUCH A REPORT MAY DISCLOSE.
 - PROPERTY LINES WERE NOT INVESTIGATED AS A PART OF THE CURRENT WORK EFFORT.
 - THE AREA SHOWN HEREON IS LOCATED IN FLOOD ZONE X (SHADED) AS SHOWN ON THE FLOOD INSURANCE RATE MAP MIDDLESEX COUNTY, MASSACHUSETTS, MAP NUMBER 25017C0419E, EFFECTIVE DATE: JUNE 4, 2010.
 - UNDERGROUND UTILITIES WERE COMPILED FROM AVAILABLE RECORD PLANS OF UTILITY COMPANIES AND PUBLIC AGENCIES AND ARE APPROXIMATE ONLY. BEFORE DESIGN AND CONSTRUCTION CALL "DIG SAFE" 1-888-344-7233. SOME DATA IS CONFLICTING AND CAN ONLY BE VERIFIED BY EXCAVATION.
 - UTILITY REFERENCES:
 - NATIONAL GRID (GAS) GIS SHEETS ARL-M1235
 - TOWN OF ARLINGTON WATER LINE PLAN L.S. 72
 - TOWN OF ARLINGTON STORM DRAIN PLAN 1303 & 1709
 - TOWN OF ARLINGTON SEWER ASSESSMENT EGERTON RD. 2260
 - THE CONTRACTOR SHALL FIELD VERIFY CONDITIONS AND DIMENSIONS PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES TO THE ENGINEER.
 - WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY SHALL BE APPROPRIATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION.
 - ALL UTILITY COMPANIES, PUBLIC AND PRIVATE, MUST BE NOTIFIED, INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THIS PLAN, PRIOR TO EXCAVATING, BLASTING, INSTALLING, BACKFILLING, GRADING, PAVEMENT RESTORATION OR REPAVING.
 - THE CONTRACTOR SHALL MAINTAIN ALL EXISTING UTILITIES EXCEPT THOSE NOTED TO BE ABANDONED, REMOVED AND DISPOSED.
 - THE CONTRACTOR SHALL DISPOSE OF ALL WASTE MATERIAL IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REQUIREMENTS AT HIS/HER OWN EXPENSE, OUTSIDE OF THE PROJECT LIMITS.
 - CURB, SIDEWALK, BASIN INLETS, AND ADA CURB RAMPS WERE INSTALLED BY TOWN ENGINEER IN NOVEMBER 2017 UNDER SEPARATE CONTRACT. CONTRACTOR TO VERIFY CURB AND CURB INLET LOCATIONS AND ELEVATIONS AS PART OF THIS CONTRACT PRIOR TO CONSTRUCTION.
 - WORK INCLUDING FURNISHING AND INSTALLING TRAFFIC DELINEATORS, REMOVAL AND REPLACEMENT OF PAVEMENT MARKINGS, AND RELOCATION OF SIGNAGE ARE NOT PART OF THIS CONTRACT AND ARE TO BE COMPLETED BY OTHERS.



27 Congress Street, Suite 508
Salem, MA 01970

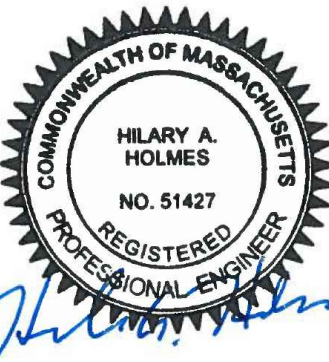
Client:



Mystic River Watershed Association
20 Academy Street, Suite 306
Arlington, MA 02476

Owner: Town of Arlington
730 Massachusetts Ave.
Arlington, MA 02476

EGERTON ROAD
GREEN INFRASTRUCTURE IMPROVEMENTS
ARLINGTON, MA
BID DOCUMENTS



Issue Date: March 8, 2018

Drawn By: HH

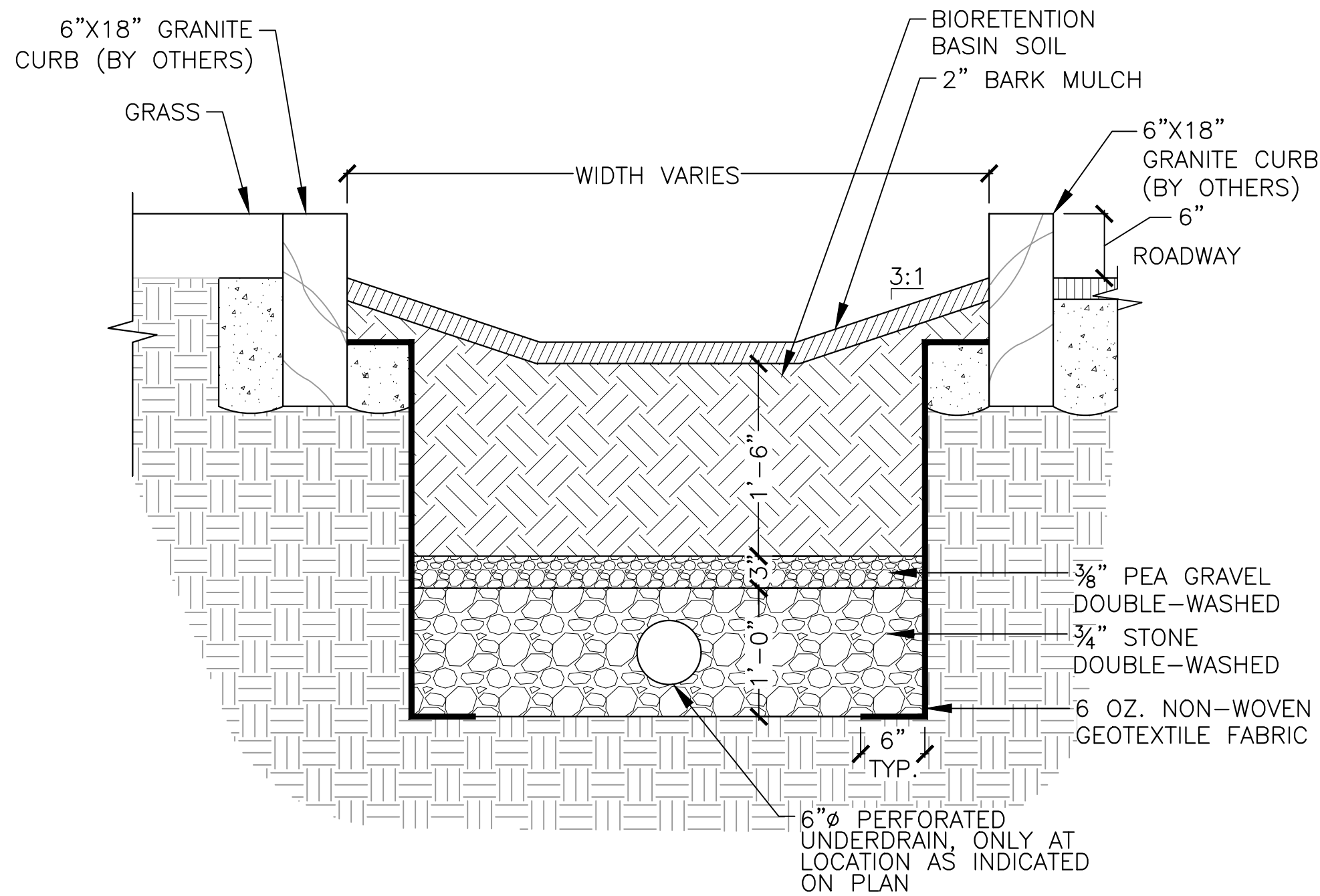
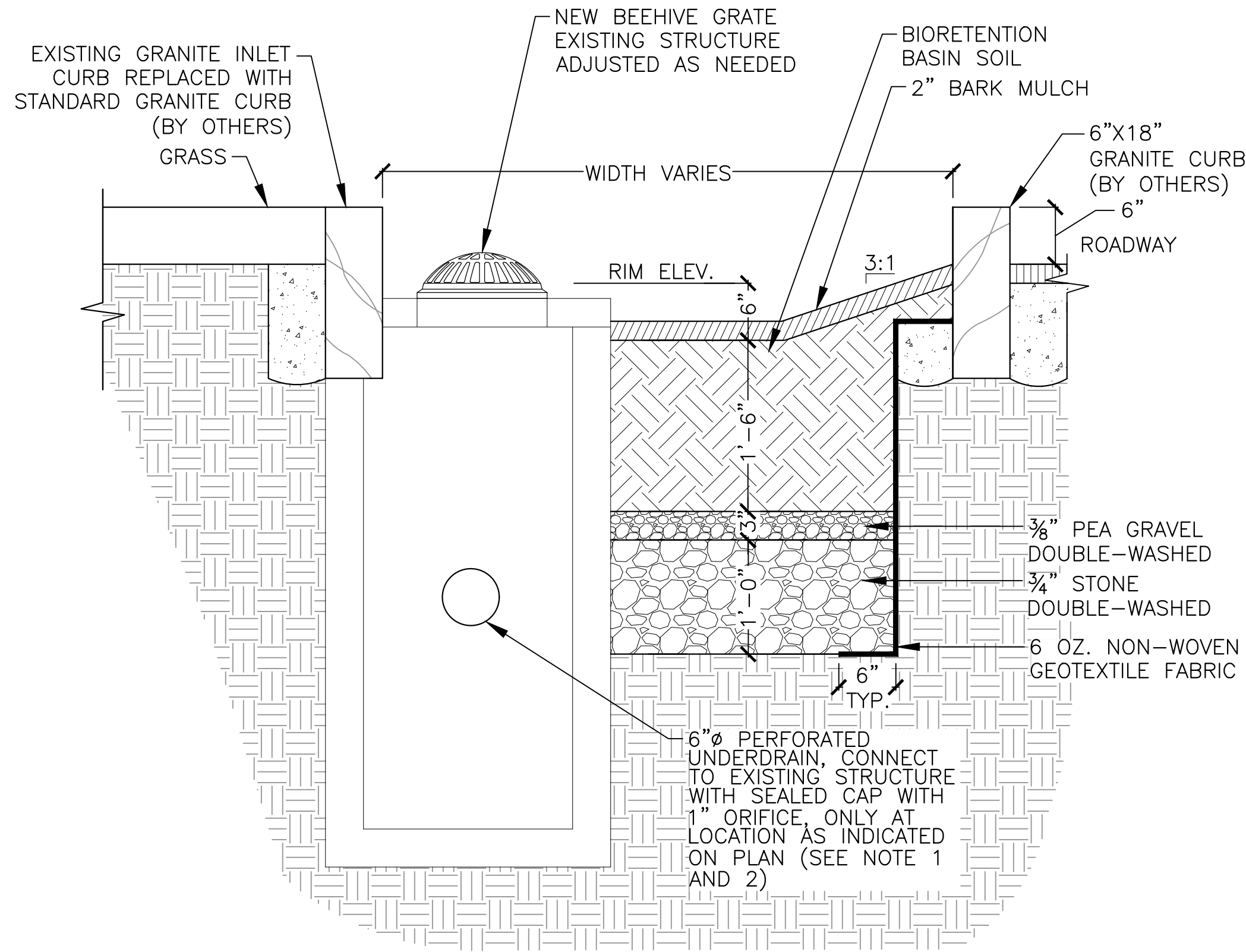
Rev'd By: DB/EA

Sheet Title:

SITE PLAN

Sheet No:

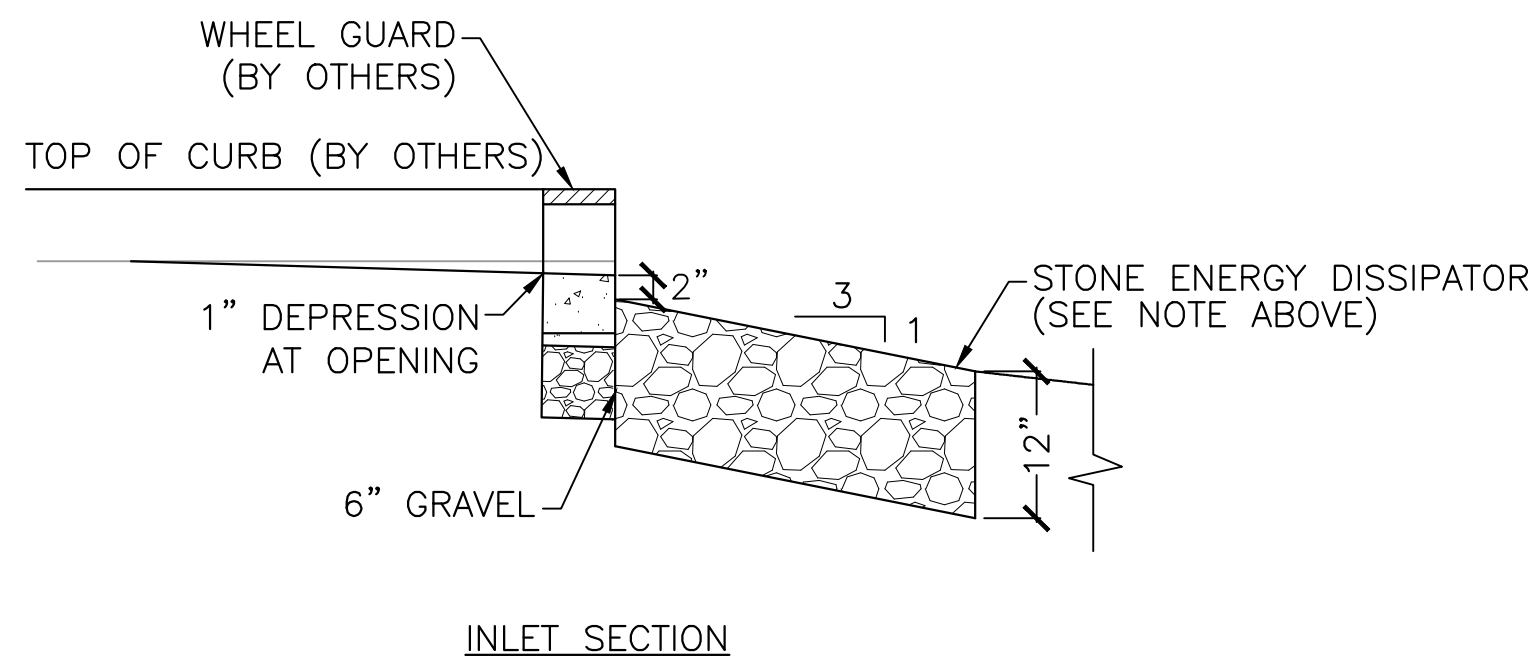
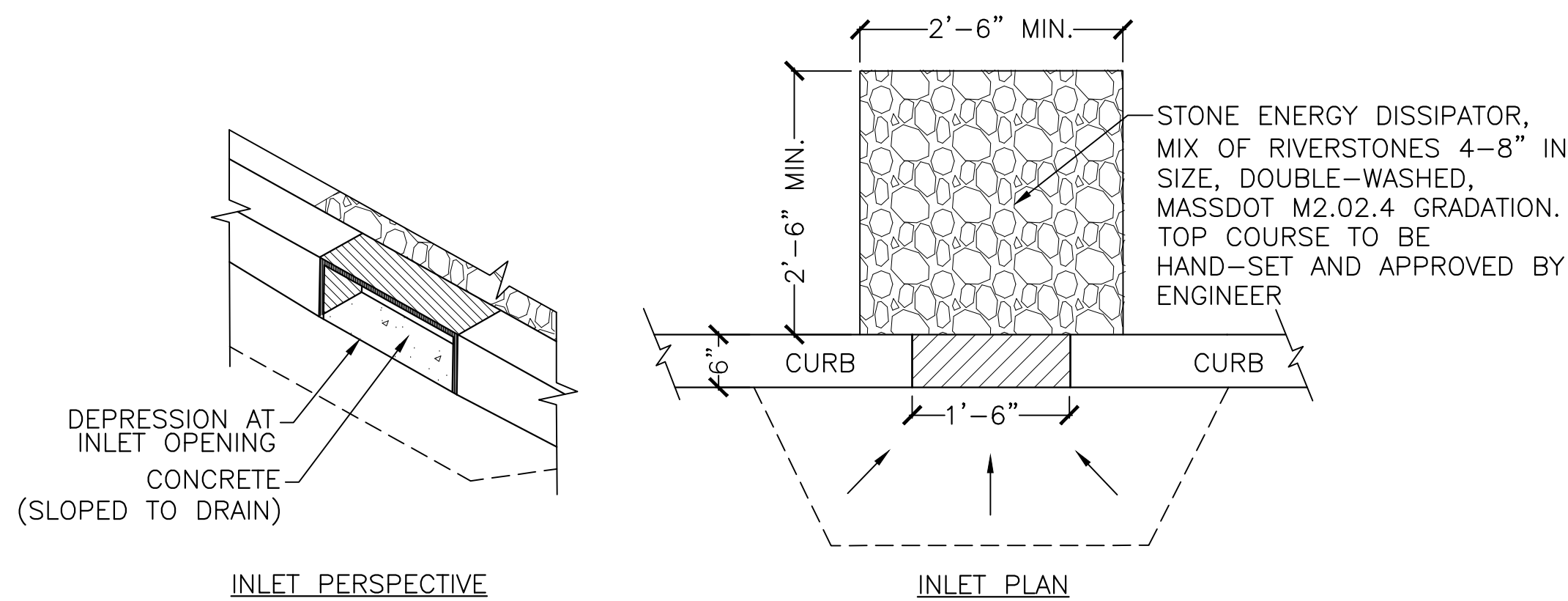
C-1



- NOTE:**
- TOTAL EXTENSION ON UNDERDRAIN AND CAP ASSEMBLY INTO INLET TO BE 3" FROM INLET WALL TO END OF CAP. 1" ORIFICE TO BE DRILLED IN CAP.
 - CAP SHALL BE ADS PRODUCT FC POS 06 0000 END PLUG WITH GASKET (OR APPROVED EQUIVALENT). UNDERDRAIN EXTENSION SHALL BE DUAL WALL CLEANOUT ADS 0674AG (OR APPROVED EQUIVALENT).

1 BIORETENTION BASIN SECTION (TYP.)

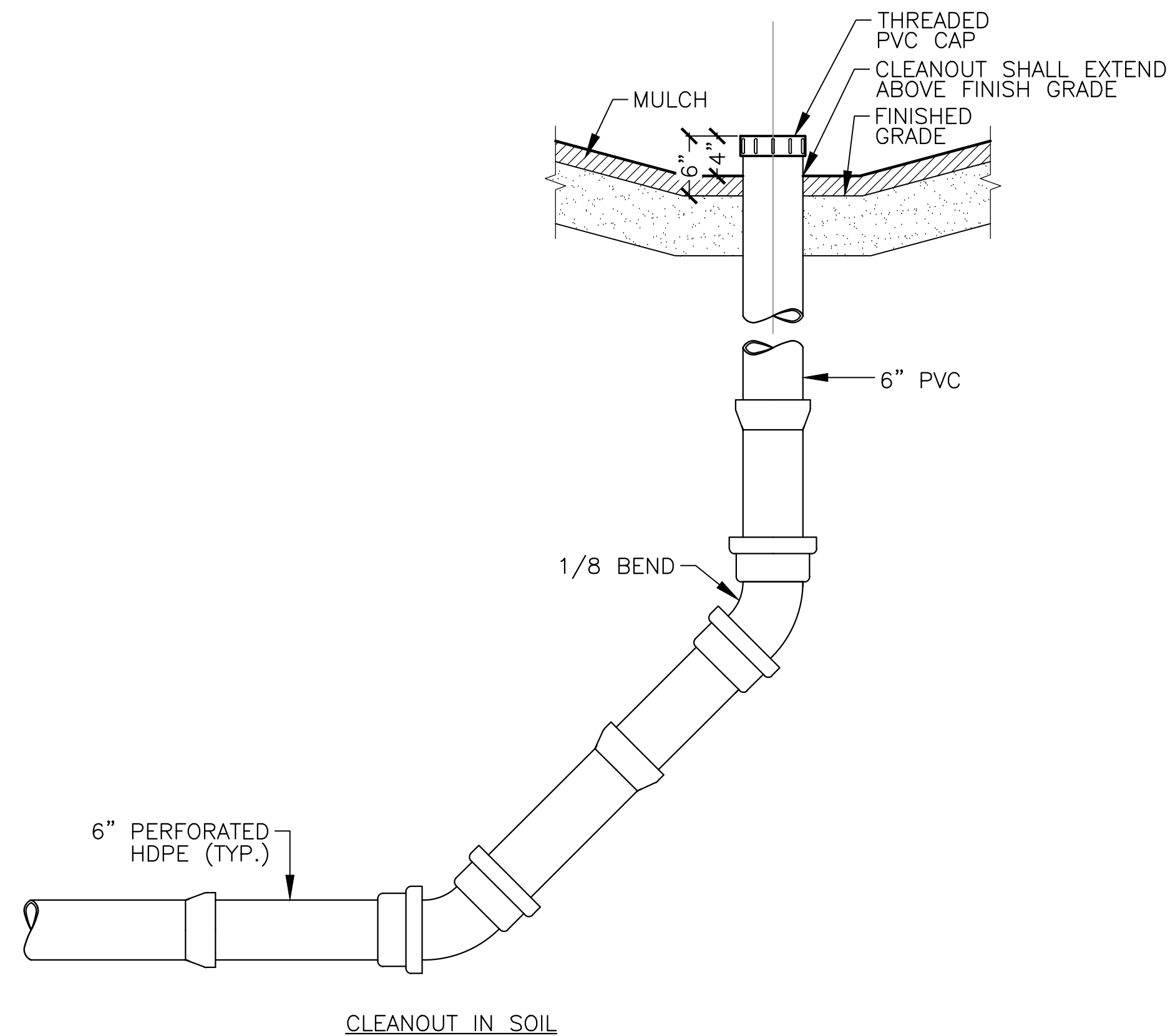
SCALE: NTS



- NOTE:**
- CURBING AND BASIN INLET WHEEL GUARD, INSTALLED BY OTHERS

2 BASIN INLET W/ STONE ENERGY DISSIPATOR

SCALE: NTS



- NOTES:**
- 6" HDPE X 6" PVC WYE JOINT FOR INLINE SECTION OR 6-1/8" BEND AND 6" HDPE TO 6" PVC FOR END SECTION.

3 CLEANOUT

SCALE: NTS

EGERTON ROAD GREEN INFRASTRUCTURE IMPROVEMENTS ARLINGTON, MA BID DOCUMENTS



Issue Date: March 8, 2018

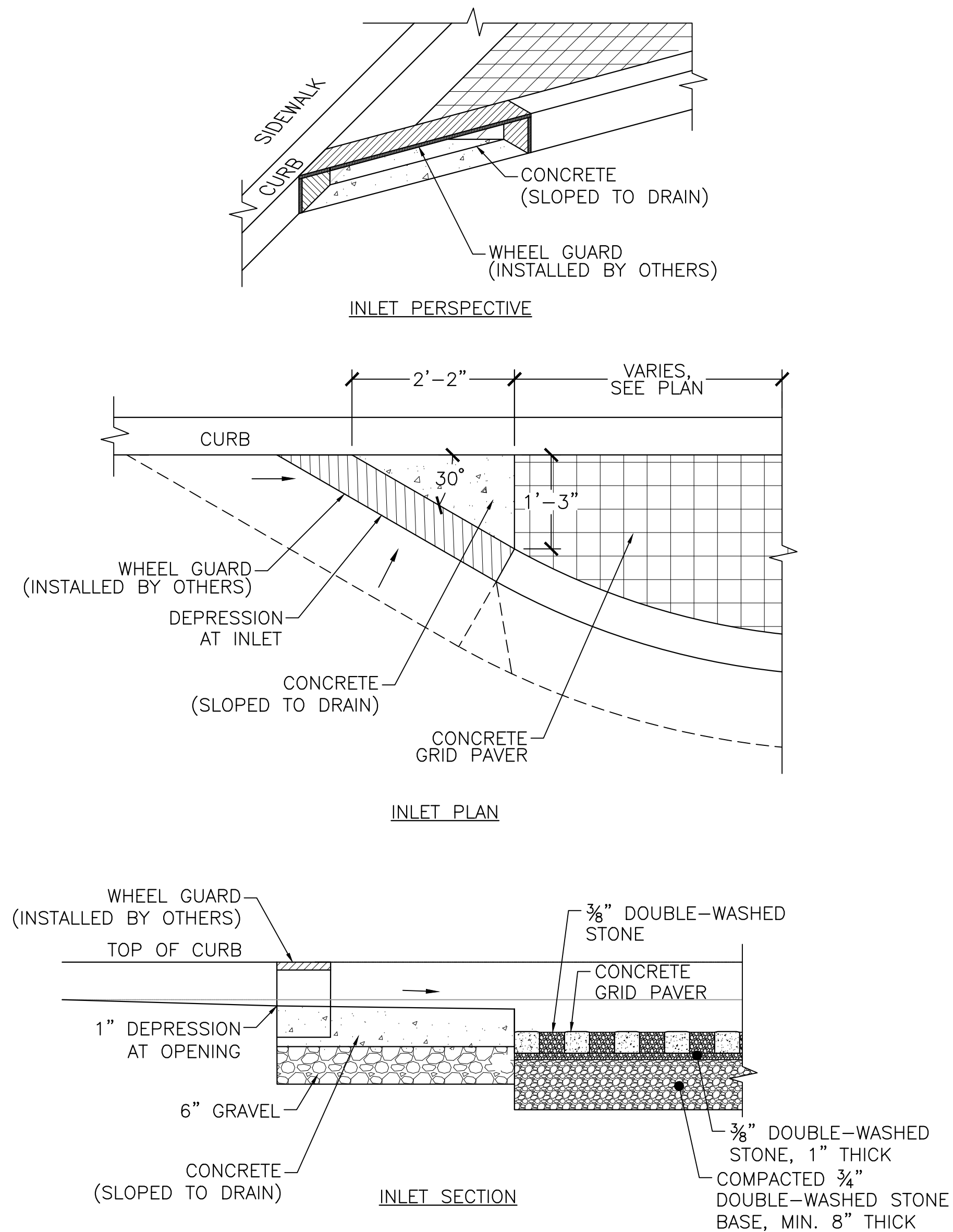
Drawn By: HH

Rev'd By: DB/EA

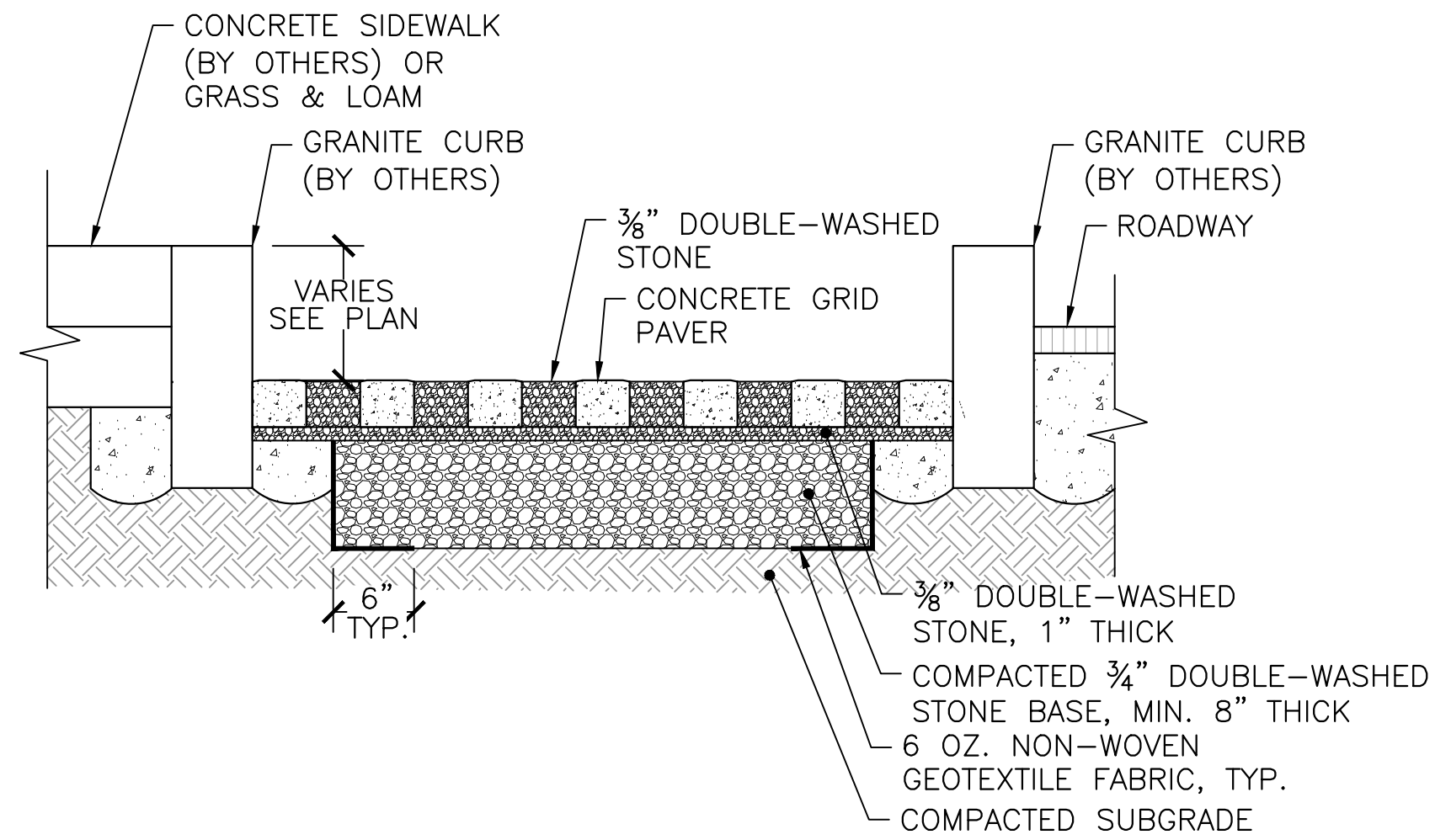
Sheet Title:
DETAILS

Sheet No:

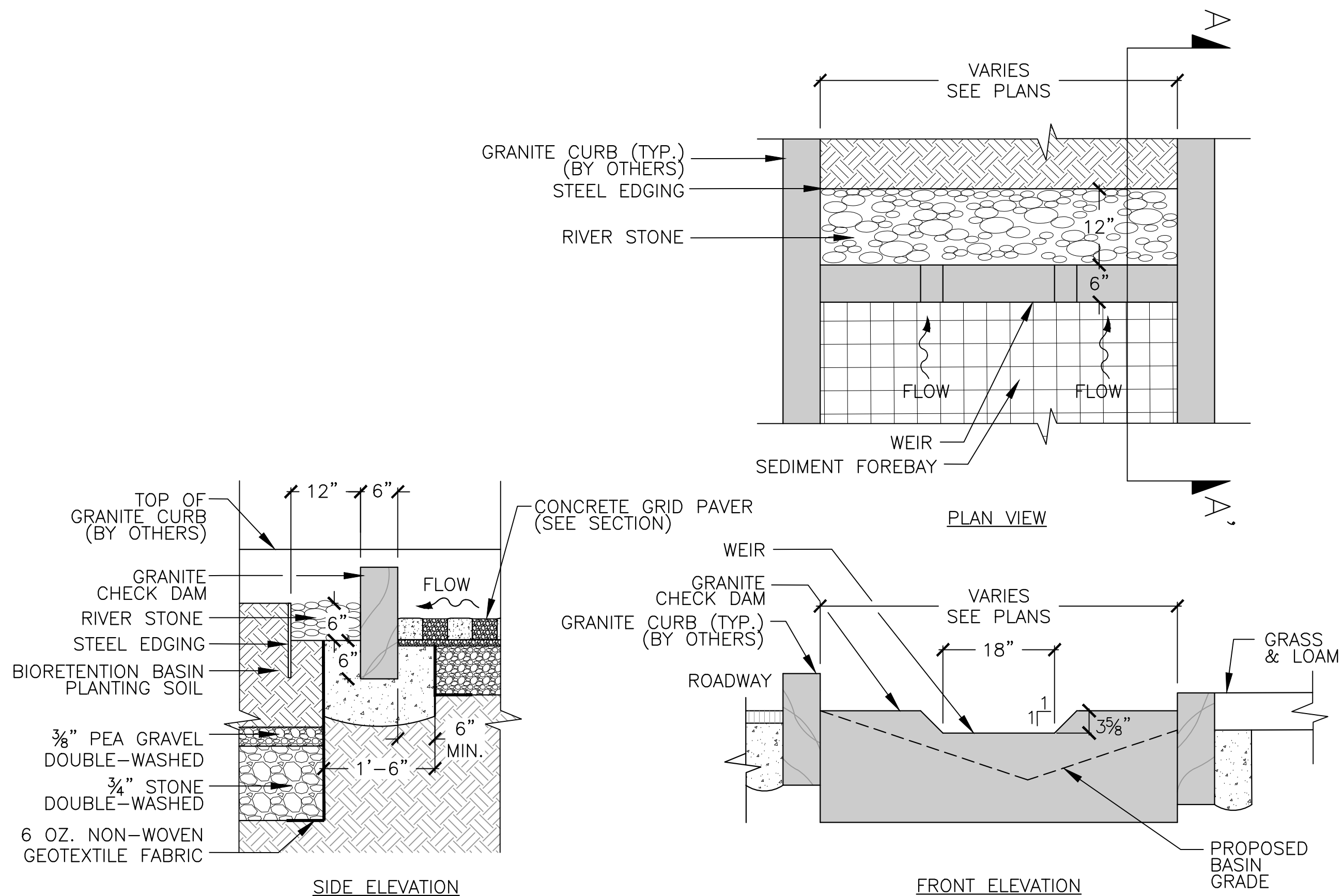
C-2



1 BASIN INLET W/ SEDIMENT FOREBAY
SCALE: NTS



2 CONCRETE GRID PAVER
SCALE: NTS



3 GRANITE CURB CHECK DAM
SCALE: NTS

**EGERTON ROAD
GREEN INFRASTRUCTURE IMPROVEMENTS
ARLINGTON, MA
BID DOCUMENTS**



Issue Date: March 8, 2018

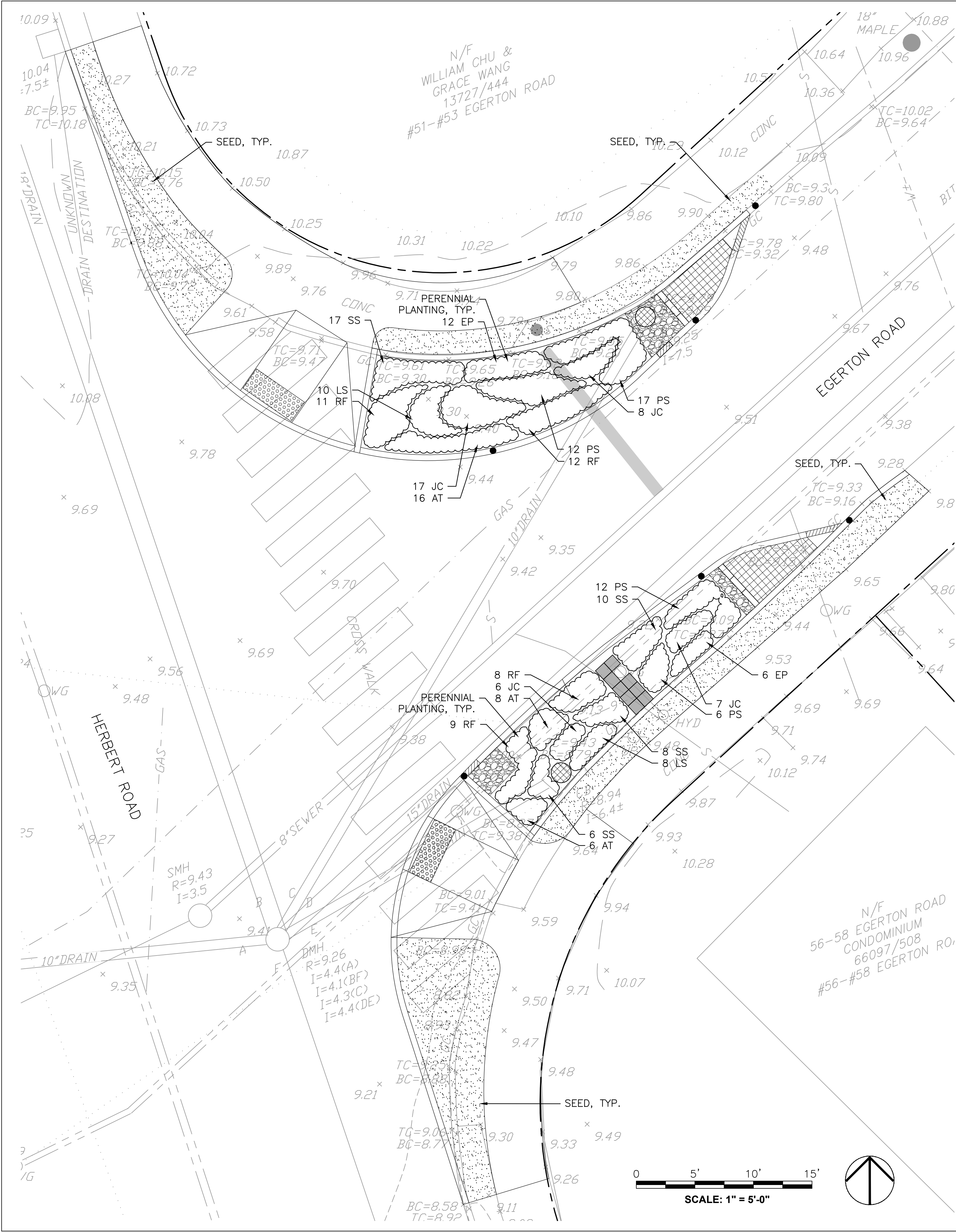
Drawn By: HH

Rev'd By: DB/EA

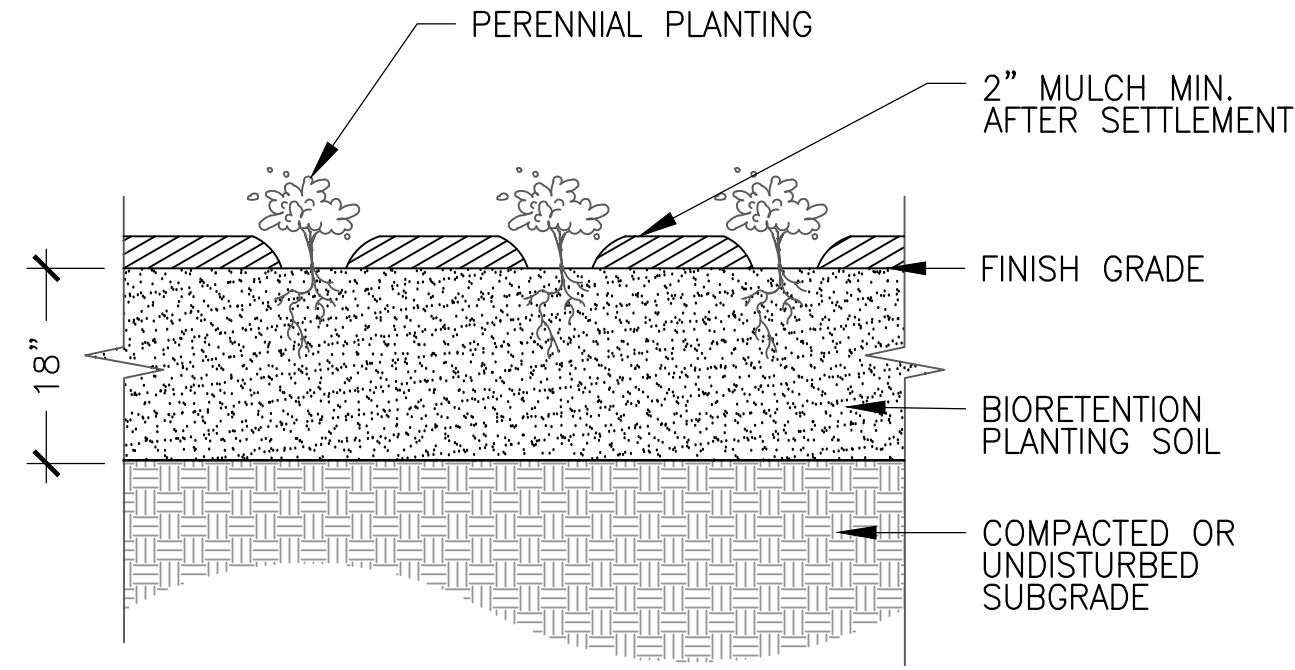
Sheet Title:
DETAILS

Sheet No:

C-3



PLANT SCHEDULE					
QTY.	SYM.	SCIENTIFIC NAME	COMMON NAME	CONTAINER	COMMENTS
30	AT	Asclepias tuberosa	Butterfly Weed	Quart	12" O.C.
18	EP	Echinacea purpurea	Purple Cone Flower	Quart	12" O.C.
38	JC	Juncus canadensis	Canada Rush	Quart	12" O.C.
18	LS	Liatris spicata	Gayfeather	Quart	12" O.C.
47	PS	Panicum virgatum 'Shenandoah'	Switchgrass	#2 Cont.	15" O.C.
40	RF	Rudbeckia fulgida	Black Eyed Susan	#1 Cont.	15" O.C.
41	SS	Schizachyrium scoparium	Little Bluestem	Quart	12" O.C.
232		TOTAL			



1

BIORETENTION BASIN PLANTING

SCALE: NTS

- NOTES:
1. NO PLANTING MATERIALS SHALL BE INSTALLED PRIOR TO ACCEPTANCE OF GRADING BY THE OWNER'S REPRESENTATIVE.
 2. ALL DISTURBED AREAS SHALL RECEIVE THE FOLLOWING TREATMENT: RAKE/SCARIFY SURFACE OF TOPSOIL, APPLY OWNER APPROVED TURF SEED MIX BY HAND OR USING BRILL-TYPE SEEDER (2 APPLICATIONS 90 DEGREES FROM ONE ANOTHER), COMPACT SURFACE WITH LAWN ROLLER.
 3. ALL PLANTS SHALL BE STRAIGHT SPECIES, NO CULTIVARS SHALL BE USED, UNLESS OTHERWISE NOTED.
 4. ALL PLANT MATERIAL SHALL CONFORM TO THE MINIMUM GUIDELINES ESTABLISHED FOR NURSERY STOCK PUBLISHED BY THE AMERICAN SOCIETY OF NURSERYMEN, INC. IN ADDITION, ALL NEW PLANT MATERIAL FOR THE PROJECT SHALL BE OF SPECIMEN QUALITY.
 5. THE CONTRACTOR SHALL SUPPLY ALL NEW PLANT MATERIAL IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTING PLAN SHOWN.
 6. ANY PROPOSED SUBSTITUTION OF PLANT SPECIES SHALL BE MADE WITH PLANTS OF EQUIVALENT OVERALL FORM, HEIGHT, BRANCHING HABIT, FLOWER, LEAF, COLOR, FRUIT AND CULTURE AND ONLY AFTER WRITTEN APPROVAL BY THE OWNER'S REPRESENTATIVE.
 7. CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ALL DAMAGED, STOLEN, DEAD, DECLINING OR LOST MATERIAL UNTIL COMPLETION OF THE (1) YEAR MAINTENANCE AND GUARANTEE PERIOD.



27 Congress Street, Suite 508
Salem, MA 01970

Client:



Mystic River Watershed Association
20 Academy Street, Suite 306
Arlington, MA 02476

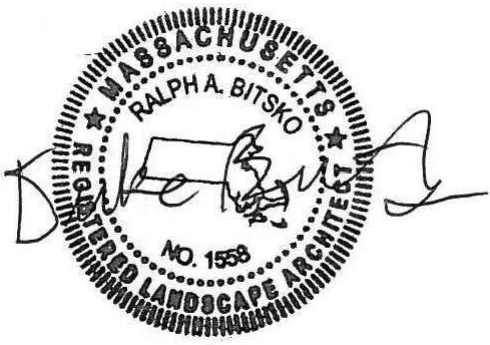
Owner: Town of Arlington
730 Massachusetts Ave.
Arlington, MA 02476

EGERTON ROAD

GREEN INFRASTRUCTURE IMPROVEMENTS

ARLINGTON, MA

BID DOCUMENTS



Issue Date: March 8, 2018

Drawn By: AK

Rev'd By: DB

Sheet Title:

PLANTING
PLAN

Sheet No:

L-1

To view and print Weekly Payroll & Statement of Compliance Forms, click on www.mass.gov/dols/pw.

PLEASE NOTE: The attached Prevailing Wage Schedule is valid for 90 days. An Awarding Authority should re-request an up to date Prevailing Wage Schedule if it has NOT opened bids or selected a contractor within 90 days of the issuance date of the attached prevailing wage schedule.

*For MULTI-YEAR projects bid on or after 8/8/08, Awarding Authorities must request an Annual Update to this Prevailing Wage Schedule each year for the duration of the project, no later than two weeks before the anniversary date of the execution of the general contract. Annual updates are not required for projects that last LESS THAN ONE YEAR.

*For CM AT RISK projects (bid pursuant to GL c.149A), Awarding Authorities must request a Prevailing Wage Schedule NOT sooner than 90-days before the earlier of: (a) the execution date of the GMP Amendment, or (b) the bid for the first construction scope of work.

*For MULTI-YEAR CM AT RISK projects, Awarding Authorities must request an Annual Update to this Prevailing Wage Schedule each year for the duration of the project, no later than two weeks before the anniversary date, which is the earlier of: (a) the execution date of the GMP Amendment, or (b) the execution date of the first amendment to procure construction scopes of work.

Apprentice wages (expressed as dollar figures) and the required benefits are listed on the Prevailing Wage Schedule. For further details, please see opinion letter PW-2010-03-03.16.10 (dated March 18, 2010) at www.mass.gov/dols/pw.

Request Prevailing Wage Rates online at: www.mass.gov/dols/pw.

THIS IS A SYSTEM-GENERATED EMAIL. PLEASE DO NOT REPLY TO THIS EMAIL. TO CONTACT DLS REGARDING PREVAILING WAGE MATTERS, CALL 617-626-6953.

=====

APPROVAL/DENIAL COMMENTS



CHARLES D. BAKER
Governor

KARYN E. POLITO
Lt. Governor

THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF LABOR AND WORKFORCE DEVELOPMENT
DEPARTMENT OF LABOR STANDARDS

Prevailing Wage Rates

As determined by the Director under the provisions of the
Massachusetts General Laws, Chapter 149, Sections 26 to 27H

ROSALIN ACOSTA
Secretary
WILLIAM D MCKINNEY
Director

Awarding Authority: Town of Arlington
Contract Number: 18-20 **City/Town:** ARLINGTON
Description of Work: Construction of 2 each Bioretention Basins as required.
Job Location: Various

Information about Prevailing Wage Schedules for Awarding Authorities and Contractors

- This wage schedule applies only to the specific project referenced at the top of this page and uniquely identified by the "Wage Request Number" on all pages of this schedule.
- An Awarding Authority must request an updated wage schedule from the Department of Labor Standards ("DLS") if it has not opened bids or selected a contractor within 90 days of the date of issuance of the wage schedule. For CM AT RISK projects (bid pursuant to G.L. c.149A), the earlier of: (a) the execution date of the GMP Amendment, or (b) the bid for the first construction scope of work must be within 90-days of the wage schedule issuance date.
- The wage schedule shall be incorporated in any advertisement or call for bids for the project as required by M.G.L. c. 149, § 27. The wage schedule shall be made a part of the contract awarded for the project. The wage schedule must be posted in a conspicuous place at the work site for the life of the project in accordance with M.G.L. c. 149 § 27. The wages listed on the wage schedule must be paid to employees performing construction work on the project whether they are employed by the prime contractor, a filed sub-bidder, or any sub-contractor.
- All apprentices working on the project are required to be registered with the Massachusetts Department of Labor Standards, Division of Apprentice Standards (DLS/DAS). Apprentice must keep his/her apprentice identification card on his/her person during all work hours on the project. An apprentice registered with DAS may be paid the lower apprentice wage rate at the applicable step as provided on the prevailing wage schedule. **Any apprentice not registered with DLS/DAS regardless of whether or not they are registered with any other federal, state, local, or private agency must be paid the journeyworker's rate for the trade.**
- The wage rates will remain in effect for the duration of the project, except in the case of multi-year public construction projects. For construction projects lasting longer than one year, awarding authorities must request an updated wage schedule. Awarding authorities are required to request these updates no later than two weeks before the anniversary of the date the contract was executed by the awarding authority and the general contractor. For multi-year CM AT RISK projects, awarding authority must request an annual update no later than two weeks before the anniversary date, determined as the earlier of: (a) the execution date of the GMP Amendment, or (b) the execution date of the first amendment to permit procurement of construction services. Contractors are required to obtain the wage schedules from awarding authorities, and to pay no less than these rates to covered workers. The annual update requirement is not applicable to 27F "rental of equipment" contracts.
- Every contractor or subcontractor which performs construction work on the project is required to submit weekly payroll reports and a Statement of Compliance directly to the awarding authority by mail or email and keep them on file for three years. Each weekly payroll report must contain: the employee's name, address, occupational classification, hours worked, and wages paid. Do not submit weekly payroll reports to DLS. A sample of a payroll reporting form may be obtained at <http://www.mass.gov/dols/pw>.
- Contractors with questions about the wage rates or classifications included on the wage schedule have an affirmative obligation to inquire with DLS at (617) 626-6953.
- Employees not receiving the prevailing wage rate set forth on the wage schedule may report the violation to the Fair Labor Division of the office of the Attorney General at (617) 727-3465.
- Failure of a contractor or subcontractor to pay the prevailing wage rates listed on the wage schedule to all employees who perform construction work on the project is a violation of the law and subjects the contractor or subcontractor to civil and

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
Construction						
(2 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2016	\$33.25	\$10.91	\$10.89	\$0.00	\$55.05
(3 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2016	\$33.32	\$10.91	\$10.89	\$0.00	\$55.12
(4 & 5 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2016	\$33.44	\$10.91	\$10.89	\$0.00	\$55.24
ADS/SUBMERSIBLE PILOT <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2017	\$92.97	\$9.90	\$21.15	\$0.00	\$124.02
	08/01/2018	\$97.80	\$9.90	\$21.15	\$0.00	\$128.85
	08/01/2019	\$102.78	\$9.90	\$21.15	\$0.00	\$133.83
For apprentice rates see "Apprentice- PILE DRIVER"						
AIR TRACK OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2017	\$38.25	\$7.70	\$14.75	\$0.00	\$60.70
	06/01/2018	\$39.20	\$7.70	\$14.75	\$0.00	\$61.65
	12/01/2018	\$40.15	\$7.70	\$14.75	\$0.00	\$62.60
	06/01/2019	\$41.15	\$7.70	\$14.75	\$0.00	\$63.60
	12/01/2019	\$42.15	\$7.70	\$14.75	\$0.00	\$64.60
	06/01/2020	\$43.14	\$7.70	\$14.75	\$0.00	\$65.59
	12/01/2020	\$44.12	\$7.70	\$14.75	\$0.00	\$66.57
	06/01/2021	\$45.14	\$7.70	\$14.75	\$0.00	\$67.59
	12/01/2021	\$46.15	\$7.70	\$14.75	\$0.00	\$68.60
For apprentice rates see "Apprentice- LABORER"						
ASBESTOS REMOVER - PIPE / MECH. EQUIPT. <i>HEAT & FROST INSULATORS LOCAL 6 (BOSTON)</i>	12/01/2017	\$35.90	\$11.50	\$7.10	\$0.00	\$54.50
	06/01/2018	\$36.90	\$11.50	\$7.10	\$0.00	\$55.50
	12/01/2018	\$37.90	\$11.50	\$7.10	\$0.00	\$56.50
	06/01/2019	\$38.90	\$11.50	\$7.10	\$0.00	\$57.50
	12/01/2019	\$39.90	\$11.50	\$7.10	\$0.00	\$58.50
	06/01/2020	\$40.90	\$11.50	\$7.10	\$0.00	\$59.50
	12/01/2020	\$41.90	\$11.50	\$7.10	\$0.00	\$60.50
ASPHALT RAKER <i>LABORERS - ZONE 1</i>	12/01/2017	\$37.75	\$7.70	\$14.75	\$0.00	\$60.20
	06/01/2018	\$38.70	\$7.70	\$14.75	\$0.00	\$61.15
	12/01/2018	\$39.65	\$7.70	\$14.75	\$0.00	\$62.10
	06/01/2019	\$40.65	\$7.70	\$14.75	\$0.00	\$63.10
	12/01/2019	\$41.65	\$7.70	\$14.75	\$0.00	\$64.10
	06/01/2020	\$42.64	\$7.70	\$14.75	\$0.00	\$65.09
	12/01/2020	\$43.62	\$7.70	\$14.75	\$0.00	\$66.07
	06/01/2021	\$44.64	\$7.70	\$14.75	\$0.00	\$67.09
	12/01/2021	\$45.65	\$7.70	\$14.75	\$0.00	\$68.10
For apprentice rates see "Apprentice- LABORER"						
ASPHALT/CONCRETE/CRUSHER PLANT-ON SITE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2017	\$46.63	\$10.50	\$15.50	\$0.00	\$72.63
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BACKHOE/FRONT-END LOADER <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2017	\$46.63	\$10.50	\$15.50	\$0.00	\$72.63
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
BARCO-TYPE JUMPING TAMPER <i>LABORERS - ZONE 1</i>	12/01/2017	\$37.75	\$7.70	\$14.75	\$0.00	\$60.20
	06/01/2018	\$38.70	\$7.70	\$14.75	\$0.00	\$61.15
	12/01/2018	\$39.65	\$7.70	\$14.75	\$0.00	\$62.10
	06/01/2019	\$40.65	\$7.70	\$14.75	\$0.00	\$63.10
	12/01/2019	\$41.65	\$7.70	\$14.75	\$0.00	\$64.10
	06/01/2020	\$42.64	\$7.70	\$14.75	\$0.00	\$65.09
	12/01/2020	\$43.62	\$7.70	\$14.75	\$0.00	\$66.07
	06/01/2021	\$44.64	\$7.70	\$14.75	\$0.00	\$67.09
	12/01/2021	\$45.65	\$7.70	\$14.75	\$0.00	\$68.10
For apprentice rates see "Apprentice- LABORER"						
BLOCK PAVER, RAMMER / CURB SETTER <i>LABORERS - ZONE 1</i>	12/01/2017	\$38.25	\$7.70	\$14.75	\$0.00	\$60.70
	06/01/2018	\$39.20	\$7.70	\$14.75	\$0.00	\$61.65
	12/01/2018	\$40.15	\$7.70	\$14.75	\$0.00	\$62.60
	06/01/2019	\$41.15	\$7.70	\$14.75	\$0.00	\$63.60
	12/01/2019	\$42.15	\$7.70	\$14.75	\$0.00	\$64.60
	06/01/2020	\$43.14	\$7.70	\$14.75	\$0.00	\$65.59
	12/01/2020	\$44.12	\$7.70	\$14.75	\$0.00	\$66.57
	06/01/2021	\$45.14	\$7.70	\$14.75	\$0.00	\$67.59
	12/01/2021	\$46.15	\$7.70	\$14.75	\$0.00	\$68.60
For apprentice rates see "Apprentice- LABORER"						
BOILER MAKER <i>BOILERMAKERS LOCAL 29</i>	01/01/2017	\$42.92	\$6.97	\$16.21	\$0.00	\$66.10

Apprentice - BOILERMAKER - Local 29

Effective Date - 01/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	65	\$27.90	\$6.97	\$10.54	\$0.00	\$45.41
2	65	\$27.90	\$6.97	\$10.54	\$0.00	\$45.41
3	70	\$30.04	\$6.97	\$11.35	\$0.00	\$48.36
4	75	\$32.19	\$6.97	\$12.16	\$0.00	\$51.32
5	80	\$34.34	\$6.97	\$12.97	\$0.00	\$54.28
6	85	\$36.48	\$6.97	\$13.78	\$0.00	\$57.23
7	90	\$38.63	\$6.97	\$14.59	\$0.00	\$60.19
8	95	\$40.77	\$6.97	\$15.40	\$0.00	\$63.14

Notes:

Apprentice to Journeyworker Ratio:1:5

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING) <i>BRICKLAYERS LOCAL 3 (BOSTON)</i>	02/01/2018	\$52.06	\$10.75	\$20.03	\$0.00	\$82.84
	08/01/2018	\$53.41	\$10.75	\$20.16	\$0.00	\$84.32
	02/01/2019	\$54.05	\$10.75	\$20.16	\$0.00	\$84.96
	08/01/2019	\$55.40	\$10.75	\$20.30	\$0.00	\$86.45
	02/01/2020	\$56.04	\$10.75	\$20.30	\$0.00	\$87.09
	08/01/2020	\$57.39	\$10.75	\$20.45	\$0.00	\$88.59
	02/01/2021	\$58.03	\$10.75	\$20.45	\$0.00	\$89.23
	08/01/2021	\$59.43	\$10.75	\$20.61	\$0.00	\$90.79
	02/01/2022	\$60.02	\$10.75	\$20.61	\$0.00	\$91.38

Apprentice - BRICK/PLASTER/CEMENT MASON - Local 3 Boston

Effective Date - 02/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.03	\$10.75	\$20.03	\$0.00	\$56.81
2	60	\$31.24	\$10.75	\$20.03	\$0.00	\$62.02
3	70	\$36.44	\$10.75	\$20.03	\$0.00	\$67.22
4	80	\$41.65	\$10.75	\$20.03	\$0.00	\$72.43
5	90	\$46.85	\$10.75	\$20.03	\$0.00	\$77.63

Effective Date - 08/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.71	\$10.75	\$20.16	\$0.00	\$57.62
2	60	\$32.05	\$10.75	\$20.16	\$0.00	\$62.96
3	70	\$37.39	\$10.75	\$20.16	\$0.00	\$68.30
4	80	\$42.73	\$10.75	\$20.16	\$0.00	\$73.64
5	90	\$48.07	\$10.75	\$20.16	\$0.00	\$78.98

Notes:

Apprentice to Journeyworker Ratio:1:5

BULLDOZER/GRADER/SCRAPER <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2017	\$46.17	\$10.50	\$15.50	\$0.00	\$72.17
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
CAISSON & UNDERPINNING BOTTOM MAN <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2017	\$38.60	\$7.70	\$14.95	\$0.00	\$61.25
	06/01/2018	\$39.55	\$7.70	\$14.95	\$0.00	\$62.20
	12/01/2018	\$40.50	\$7.70	\$14.95	\$0.00	\$63.15
	06/01/2019	\$41.50	\$7.70	\$14.95	\$0.00	\$64.15
	12/01/2019	\$42.50	\$7.70	\$14.95	\$0.00	\$65.15
	06/01/2020	\$43.49	\$7.70	\$14.95	\$0.00	\$66.14
	12/01/2020	\$44.47	\$7.70	\$14.95	\$0.00	\$67.12
	06/01/2021	\$45.49	\$7.70	\$14.95	\$0.00	\$68.14
	12/01/2021	\$46.50	\$7.70	\$14.95	\$0.00	\$69.15

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
CAISSON & UNDERPINNING LABORER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2017	\$37.45	\$7.70	\$14.95	\$0.00	\$60.10
	06/01/2018	\$38.40	\$7.70	\$14.95	\$0.00	\$61.05
	12/01/2018	\$39.35	\$7.70	\$14.95	\$0.00	\$62.00
	06/01/2019	\$40.35	\$7.70	\$14.95	\$0.00	\$63.00
	12/01/2019	\$41.35	\$7.70	\$14.95	\$0.00	\$64.00
	06/01/2020	\$42.34	\$7.70	\$14.95	\$0.00	\$64.99
	12/01/2020	\$43.32	\$7.70	\$14.95	\$0.00	\$65.97
	06/01/2021	\$44.34	\$7.70	\$14.95	\$0.00	\$66.99
	12/01/2021	\$45.35	\$7.70	\$14.95	\$0.00	\$68.00
For apprentice rates see "Apprentice- LABORER"						
CAISSON & UNDERPINNING TOP MAN <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2017	\$37.45	\$7.70	\$14.95	\$0.00	\$60.10
	06/01/2018	\$38.40	\$7.70	\$14.95	\$0.00	\$61.05
	12/01/2018	\$39.35	\$7.70	\$14.95	\$0.00	\$62.00
	06/01/2019	\$40.35	\$7.70	\$14.95	\$0.00	\$63.00
	12/01/2019	\$41.35	\$7.70	\$14.95	\$0.00	\$64.00
	06/01/2020	\$42.34	\$7.70	\$14.95	\$0.00	\$64.99
	12/01/2020	\$43.32	\$7.70	\$14.95	\$0.00	\$65.97
	06/01/2021	\$44.34	\$7.70	\$14.95	\$0.00	\$66.99
	12/01/2021	\$45.35	\$7.70	\$14.95	\$0.00	\$68.00
For apprentice rates see "Apprentice- LABORER"						
CARBIDE CORE DRILL OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2017	\$37.75	\$7.70	\$14.75	\$0.00	\$60.20
	06/01/2018	\$38.70	\$7.70	\$14.75	\$0.00	\$61.15
	12/01/2018	\$39.65	\$7.70	\$14.75	\$0.00	\$62.10
	06/01/2019	\$40.65	\$7.70	\$14.75	\$0.00	\$63.10
	12/01/2019	\$41.65	\$7.70	\$14.75	\$0.00	\$64.10
	06/01/2020	\$42.64	\$7.70	\$14.75	\$0.00	\$65.09
	12/01/2020	\$43.62	\$7.70	\$14.75	\$0.00	\$66.07
	06/01/2021	\$44.64	\$7.70	\$14.75	\$0.00	\$67.09
	12/01/2021	\$45.65	\$7.70	\$14.75	\$0.00	\$68.10
For apprentice rates see "Apprentice- LABORER"						
CARPENTER <i>CARPENTERS -ZONE 2 (Eastern Massachusetts)</i>	03/01/2018	\$40.28	\$9.90	\$17.50	\$0.00	\$67.68
	09/01/2018	\$41.32	\$9.90	\$17.50	\$0.00	\$68.72
	03/01/2019	\$42.35	\$9.90	\$17.50	\$0.00	\$69.75

Classification
Effective Date
Base Wage
Health
Pension
**Supplemental
Unemployment**
Total Rate
Apprentice - CARPENTER - Zone 2 Eastern MA
Effective Date - 03/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.14	\$9.90	\$1.73	\$0.00	\$31.77
2	60	\$24.17	\$9.90	\$1.73	\$0.00	\$35.80
3	70	\$28.20	\$9.90	\$12.31	\$0.00	\$50.41
4	75	\$30.21	\$9.90	\$12.31	\$0.00	\$52.42
5	80	\$32.22	\$9.90	\$14.04	\$0.00	\$56.16
6	80	\$32.22	\$9.90	\$14.04	\$0.00	\$56.16
7	90	\$36.25	\$9.90	\$15.77	\$0.00	\$61.92
8	90	\$36.25	\$9.90	\$15.77	\$0.00	\$61.92

Effective Date - 09/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.66	\$9.90	\$1.73	\$0.00	\$32.29
2	60	\$24.79	\$9.90	\$1.73	\$0.00	\$36.42
3	70	\$28.92	\$9.90	\$12.31	\$0.00	\$51.13
4	75	\$30.99	\$9.90	\$12.31	\$0.00	\$53.20
5	80	\$33.06	\$9.90	\$14.04	\$0.00	\$57.00
6	80	\$33.06	\$9.90	\$14.04	\$0.00	\$57.00
7	90	\$37.19	\$9.90	\$15.77	\$0.00	\$62.86
8	90	\$37.19	\$9.90	\$15.77	\$0.00	\$62.86

Notes:

% Indentured After 10/1/17; 45/45/55/55/70/70/80/80
Step 1&2 \$29.76/ 3&4 \$35.45/ 5&6 \$52.14/ 7&8 \$57.89

Apprentice to Journeyworker Ratio:1:5

CARPENTER WOOD FRAME	04/01/2018	\$26.67	\$7.07	\$7.86	\$0.00	\$41.60
CARPENTERS -ZONE 2 (Wood Frame)	10/01/2018	\$27.09	\$7.07	\$7.86	\$0.00	\$42.02
	04/01/2019	\$27.52	\$7.07	\$7.86	\$0.00	\$42.45
	10/01/2019	\$27.95	\$7.07	\$7.86	\$0.00	\$42.88

As of 9/1/09 Carpentry work on wood-frame WEATHERIZATION projects shall be paid the WOOD FRAME CARPENTER rate.

Classification
Effective Date
Base Wage
Health
Pension
**Supplemental
Unemployment**
Total Rate
Apprentice - CARPENTER (Wood Frame) - Zone 2
Effective Date - 04/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$16.00	\$7.07	\$0.00	\$0.00	\$23.07
2	60	\$16.00	\$7.07	\$0.00	\$0.00	\$23.07
3	65	\$17.34	\$7.07	\$7.86	\$0.00	\$32.27
4	70	\$18.67	\$7.07	\$7.86	\$0.00	\$33.60
5	75	\$20.00	\$7.07	\$7.86	\$0.00	\$34.93
6	80	\$21.34	\$7.07	\$7.86	\$0.00	\$36.27
7	85	\$22.67	\$7.07	\$7.86	\$0.00	\$37.60
8	90	\$24.00	\$7.07	\$7.86	\$0.00	\$38.93

Effective Date - 10/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$16.25	\$7.07	\$0.00	\$0.00	\$23.32
2	60	\$16.25	\$7.07	\$0.00	\$0.00	\$23.32
3	65	\$17.61	\$7.07	\$7.86	\$0.00	\$32.54
4	70	\$18.96	\$7.07	\$7.86	\$0.00	\$33.89
5	75	\$20.32	\$7.07	\$7.86	\$0.00	\$35.25
6	80	\$21.67	\$7.07	\$7.86	\$0.00	\$36.60
7	85	\$23.03	\$7.07	\$7.86	\$0.00	\$37.96
8	90	\$24.38	\$7.07	\$7.86	\$0.00	\$39.31

Notes:

% Indentured After 10/1/17; 45/45/55/55/70/70/80/80
Step 1&2 \$19.07/ 3&4 \$26.49/ 5&6 \$33.60/ 7&8 \$36.27

Apprentice to Journeyworker Ratio:1:5

CARPENTER WOOD FRAME (All Other Work) CARPENTERS -ZONE 2 (Wood Frame)	06/01/2016	\$25.32	\$9.80	\$16.82	\$0.00	\$51.94
CEMENT MASONRY/PLASTERING BRICKLAYERS LOCAL 3 (BOSTON)	01/01/2018	\$46.02	\$12.35	\$22.41	\$0.30	\$81.08
	07/01/2018	\$47.41	\$12.35	\$22.41	\$0.30	\$82.47
	01/01/2019	\$48.15	\$12.35	\$22.41	\$0.30	\$83.21
	07/01/2019	\$49.54	\$12.35	\$22.41	\$0.30	\$84.60
	01/01/2020	\$50.29	\$12.35	\$22.41	\$0.30	\$85.35

Classification
Effective Date
Base Wage
Health
Pension
**Supplemental
Unemployment**
Total Rate
Apprentice - CEMENT MASONRY/PLASTERING - Eastern Mass (Boston)
Effective Date - 01/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.01	\$12.35	\$15.41	\$0.00	\$50.77
2	60	\$27.61	\$12.35	\$17.41	\$0.30	\$57.67
3	65	\$29.91	\$12.35	\$18.41	\$0.30	\$60.97
4	70	\$32.21	\$12.35	\$19.41	\$0.30	\$64.27
5	75	\$34.52	\$12.35	\$20.41	\$0.30	\$67.58
6	80	\$36.82	\$12.35	\$21.41	\$0.30	\$70.88
7	90	\$41.42	\$12.35	\$22.41	\$0.30	\$76.48

Effective Date - 07/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.71	\$12.35	\$15.41	\$0.00	\$51.47
2	60	\$28.45	\$12.35	\$17.41	\$0.30	\$58.51
3	65	\$30.82	\$12.35	\$18.41	\$0.30	\$61.88
4	70	\$33.19	\$12.35	\$19.41	\$0.30	\$65.25
5	75	\$35.56	\$12.35	\$20.41	\$0.30	\$68.62
6	80	\$37.93	\$12.35	\$21.41	\$0.30	\$71.99
7	90	\$42.67	\$12.35	\$22.41	\$0.30	\$77.73

Notes:

Steps 3,4 are 500 hrs. All other steps are 1,000 hrs.

Apprentice to Journeyworker Ratio:1:3

CHAIN SAW OPERATOR	12/01/2017	\$37.75	\$7.70	\$14.75	\$0.00	\$60.20
LABORERS - ZONE 1	06/01/2018	\$38.70	\$7.70	\$14.75	\$0.00	\$61.15
	12/01/2018	\$39.65	\$7.70	\$14.75	\$0.00	\$62.10
	06/01/2019	\$40.65	\$7.70	\$14.75	\$0.00	\$63.10
	12/01/2019	\$41.65	\$7.70	\$14.75	\$0.00	\$64.10
	06/01/2020	\$42.64	\$7.70	\$14.75	\$0.00	\$65.09
	12/01/2020	\$43.62	\$7.70	\$14.75	\$0.00	\$66.07
	06/01/2021	\$44.64	\$7.70	\$14.75	\$0.00	\$67.09
	12/01/2021	\$45.65	\$7.70	\$14.75	\$0.00	\$68.10
For apprentice rates see "Apprentice- LABORER"						
CLAM SHELLS/SLURRY BUCKETS/HEADING MACHINES	12/01/2017	\$47.63	\$10.50	\$15.50	\$0.00	\$73.63
OPERATING ENGINEERS LOCAL 4						
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
COMPRESSOR OPERATOR	12/01/2017	\$31.80	\$10.50	\$15.50	\$0.00	\$57.80
OPERATING ENGINEERS LOCAL 4						
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
DELEADER (BRIDGE)	01/01/2018	\$49.66	\$8.10	\$19.55	\$0.00	\$77.31
<i>PAINTERS LOCAL 35 - ZONE 2</i>	07/01/2018	\$50.76	\$8.10	\$19.55	\$0.00	\$78.41
	01/01/2019	\$51.86	\$8.10	\$19.55	\$0.00	\$79.51
	07/01/2019	\$52.96	\$8.10	\$19.55	\$0.00	\$80.61
	01/01/2020	\$54.06	\$8.10	\$19.55	\$0.00	\$81.71
	07/01/2020	\$55.16	\$8.10	\$19.55	\$0.00	\$82.81
	01/01/2021	\$56.26	\$8.10	\$19.55	\$0.00	\$83.91

Apprentice - PAINTER Local 35 - BRIDGES/TANKS

Effective Date - 01/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.83	\$8.10	\$0.00	\$0.00	\$32.93
2	55	\$27.31	\$8.10	\$5.06	\$0.00	\$40.47
3	60	\$29.80	\$8.10	\$5.52	\$0.00	\$43.42
4	65	\$32.28	\$8.10	\$5.98	\$0.00	\$46.36
5	70	\$34.76	\$8.10	\$16.79	\$0.00	\$59.65
6	75	\$37.25	\$8.10	\$17.25	\$0.00	\$62.60
7	80	\$39.73	\$8.10	\$17.71	\$0.00	\$65.54
8	90	\$44.69	\$8.10	\$18.63	\$0.00	\$71.42

Effective Date - 07/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.38	\$8.10	\$0.00	\$0.00	\$33.48
2	55	\$27.92	\$8.10	\$5.06	\$0.00	\$41.08
3	60	\$30.46	\$8.10	\$5.52	\$0.00	\$44.08
4	65	\$32.99	\$8.10	\$5.98	\$0.00	\$47.07
5	70	\$35.53	\$8.10	\$16.79	\$0.00	\$60.42
6	75	\$38.07	\$8.10	\$17.25	\$0.00	\$63.42
7	80	\$40.61	\$8.10	\$17.71	\$0.00	\$66.42
8	90	\$45.68	\$8.10	\$18.63	\$0.00	\$72.41

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

DEMO: ADZEMAN	12/01/2017	\$37.65	\$7.70	\$14.75	\$0.00	\$60.10
<i>LABORERS - ZONE 1</i>	06/01/2018	\$38.60	\$7.70	\$14.75	\$0.00	\$61.05
	12/01/2018	\$39.55	\$7.70	\$14.75	\$0.00	\$62.00
	06/01/2019	\$40.55	\$7.70	\$14.75	\$0.00	\$63.00
	12/01/2019	\$41.55	\$7.70	\$14.75	\$0.00	\$64.00
For apprentice rates see "Apprentice- LABORER"						
DEMO: BACKHOE/LOADER/HAMMER OPERATOR	12/01/2017	\$38.65	\$7.70	\$14.75	\$0.00	\$61.10
<i>LABORERS - ZONE 1</i>	06/01/2018	\$39.60	\$7.70	\$14.75	\$0.00	\$62.05
	12/01/2018	\$40.55	\$7.70	\$14.75	\$0.00	\$63.00
	06/01/2019	\$41.55	\$7.70	\$14.75	\$0.00	\$64.00
	12/01/2019	\$42.55	\$7.70	\$14.75	\$0.00	\$65.00

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- LABORER"						
DEMO: BURNERS <i>LABORERS - ZONE 1</i>	12/01/2017	\$38.40	\$7.70	\$14.75	\$0.00	\$60.85
	06/01/2018	\$39.35	\$7.70	\$14.75	\$0.00	\$61.80
	12/01/2018	\$40.30	\$7.70	\$14.75	\$0.00	\$62.75
	06/01/2019	\$41.30	\$7.70	\$14.75	\$0.00	\$63.75
	12/01/2019	\$42.30	\$7.70	\$14.75	\$0.00	\$64.75
For apprentice rates see "Apprentice- LABORER"						
DEMO: CONCRETE CUTTER/SAWYER <i>LABORERS - ZONE 1</i>	12/01/2017	\$38.65	\$7.70	\$14.75	\$0.00	\$61.10
	06/01/2018	\$39.60	\$7.70	\$14.75	\$0.00	\$62.05
	12/01/2018	\$40.55	\$7.70	\$14.75	\$0.00	\$63.00
	06/01/2019	\$41.55	\$7.70	\$14.75	\$0.00	\$64.00
	12/01/2019	\$42.55	\$7.70	\$14.75	\$0.00	\$65.00
For apprentice rates see "Apprentice- LABORER"						
DEMO: JACKHAMMER OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2017	\$38.40	\$7.70	\$14.75	\$0.00	\$60.85
	06/01/2018	\$39.35	\$7.70	\$14.75	\$0.00	\$61.80
	12/01/2018	\$40.30	\$7.70	\$14.75	\$0.00	\$62.75
	06/01/2019	\$41.30	\$7.70	\$14.75	\$0.00	\$63.75
	12/01/2019	\$42.30	\$7.70	\$14.75	\$0.00	\$64.75
For apprentice rates see "Apprentice- LABORER"						
DEMO: WRECKING LABORER <i>LABORERS - ZONE 1</i>	12/01/2017	\$37.65	\$7.70	\$14.75	\$0.00	\$60.10
	06/01/2018	\$38.60	\$7.70	\$14.75	\$0.00	\$61.05
	12/01/2018	\$39.55	\$7.70	\$14.75	\$0.00	\$62.00
	06/01/2019	\$40.55	\$7.70	\$14.75	\$0.00	\$63.00
	12/01/2019	\$41.55	\$7.70	\$14.75	\$0.00	\$64.00
For apprentice rates see "Apprentice- LABORER"						
DIRECTIONAL DRILL MACHINE OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2017	\$46.17	\$10.50	\$15.50	\$0.00	\$72.17
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
DIVER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2017	\$61.98	\$9.90	\$21.15	\$0.00	\$93.03
	08/01/2018	\$65.20	\$9.90	\$21.15	\$0.00	\$96.25
	08/01/2019	\$68.52	\$9.90	\$21.15	\$0.00	\$99.57
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER TENDER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2017	\$44.27	\$9.90	\$21.15	\$0.00	\$75.32
	08/01/2018	\$46.57	\$9.90	\$21.15	\$0.00	\$77.62
	08/01/2019	\$48.94	\$9.90	\$21.15	\$0.00	\$79.99
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER TENDER (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2017	\$66.41	\$9.90	\$21.15	\$0.00	\$97.46
	08/01/2018	\$69.86	\$9.90	\$21.15	\$0.00	\$100.91
	08/01/2019	\$73.41	\$9.90	\$21.15	\$0.00	\$104.46
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER/SLURRY (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2017	\$92.97	\$9.90	\$21.15	\$0.00	\$124.02
	08/01/2018	\$97.80	\$9.90	\$21.15	\$0.00	\$128.85
	08/01/2019	\$102.78	\$9.90	\$21.15	\$0.00	\$133.83
For apprentice rates see "Apprentice- PILE DRIVER"						
DRAWBRIDGE OPERATOR (Construction) <i>ELECTRICIANS LOCAL 103</i>	03/01/2018	\$50.15	\$13.00	\$17.85	\$0.00	\$81.00
	09/01/2018	\$51.34	\$13.00	\$17.89	\$0.00	\$82.23
	03/01/2019	\$52.53	\$13.00	\$17.93	\$0.00	\$83.46
For apprentice rates see "Apprentice- ELECTRICIAN"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
ELECTRICIAN	03/01/2018	\$50.15	\$13.00	\$17.85	\$0.00	\$81.00
<i>ELECTRICIANS LOCAL 103</i>	09/01/2018	\$51.34	\$13.00	\$17.89	\$0.00	\$82.23
	03/01/2019	\$52.53	\$13.00	\$17.93	\$0.00	\$83.46

Apprentice - *ELECTRICIAN - Local 103*

Effective Date - 03/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$20.06	\$13.00	\$0.60	\$0.00	\$33.66
2	40	\$20.06	\$13.00	\$0.60	\$0.00	\$33.66
3	45	\$22.57	\$13.00	\$13.61	\$0.00	\$49.18
4	45	\$22.57	\$13.00	\$13.61	\$0.00	\$49.18
5	50	\$25.08	\$13.00	\$13.99	\$0.00	\$52.07
6	55	\$27.58	\$13.00	\$14.38	\$0.00	\$54.96
7	60	\$30.09	\$13.00	\$14.76	\$0.00	\$57.85
8	65	\$32.60	\$13.00	\$15.15	\$0.00	\$60.75
9	70	\$35.11	\$13.00	\$15.53	\$0.00	\$63.64
10	75	\$37.61	\$13.00	\$15.93	\$0.00	\$66.54

Effective Date - 09/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$20.54	\$13.00	\$0.62	\$0.00	\$34.16
2	40	\$20.54	\$13.00	\$0.62	\$0.00	\$34.16
3	45	\$23.10	\$13.00	\$13.62	\$0.00	\$49.72
4	45	\$23.10	\$13.00	\$13.62	\$0.00	\$49.72
5	50	\$25.67	\$13.00	\$14.01	\$0.00	\$52.68
6	55	\$28.24	\$13.00	\$14.40	\$0.00	\$55.64
7	60	\$30.80	\$13.00	\$14.78	\$0.00	\$58.58
8	65	\$33.37	\$13.00	\$15.17	\$0.00	\$61.54
9	70	\$35.94	\$13.00	\$15.56	\$0.00	\$64.50
10	75	\$38.51	\$13.00	\$15.96	\$0.00	\$67.47

Notes: :

App Prior 1/1/03; 30/35/40/45/50/55/65/70/75/80

Apprentice to Journeyworker Ratio:2:3***

ELEVATOR CONSTRUCTOR	01/01/2018	\$57.62	\$15.43	\$16.61	\$0.00	\$89.66
<i>ELEVATOR CONSTRUCTORS LOCAL 4</i>	01/01/2019	\$59.47	\$15.58	\$17.51	\$0.00	\$92.56
	01/01/2020	\$61.42	\$15.73	\$18.41	\$0.00	\$95.56
	01/01/2021	\$63.47	\$15.88	\$19.31	\$0.00	\$98.66
	01/01/2022	\$65.62	\$16.03	\$20.21	\$0.00	\$101.86

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
----------------	----------------	-----------	--------	---------	---------------------------	------------

Apprentice - ELEVATOR CONSTRUCTOR - Local 4

Effective Date - 01/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$28.81	\$15.43	\$0.00	\$0.00	\$44.24
2	55	\$31.69	\$15.43	\$16.61	\$0.00	\$63.73
3	65	\$37.45	\$15.43	\$16.61	\$0.00	\$69.49
4	70	\$40.33	\$15.43	\$16.61	\$0.00	\$72.37
5	80	\$46.10	\$15.43	\$16.61	\$0.00	\$78.14

Effective Date - 01/01/2019

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$29.74	\$15.58	\$0.00	\$0.00	\$45.32
2	55	\$32.71	\$15.58	\$17.51	\$0.00	\$65.80
3	65	\$38.66	\$15.58	\$17.51	\$0.00	\$71.75
4	70	\$41.63	\$15.58	\$17.51	\$0.00	\$74.72
5	80	\$47.58	\$15.58	\$17.51	\$0.00	\$80.67

Notes:

Steps 1-2 are 6 mos.; Steps 3-5 are 1 year

Apprentice to Journeyworker Ratio:1:1

ELEVATOR CONSTRUCTOR HELPER	01/01/2018	\$40.33	\$15.43	\$16.61	\$0.00	\$72.37
ELEVATOR CONSTRUCTORS LOCAL 4	01/01/2019	\$41.63	\$15.58	\$17.51	\$0.00	\$74.72
	01/01/2020	\$42.99	\$15.73	\$18.41	\$0.00	\$77.13
	01/01/2021	\$44.43	\$15.88	\$19.31	\$0.00	\$79.62
	01/01/2022	\$45.93	\$16.03	\$20.21	\$0.00	\$82.17

For apprentice rates see "Apprentice - ELEVATOR CONSTRUCTOR"

FENCE & GUARD RAIL ERECTOR	12/01/2017	\$37.75	\$7.70	\$14.75	\$0.00	\$60.20
LABORERS - ZONE 1	06/01/2018	\$38.70	\$7.70	\$14.75	\$0.00	\$61.15
	12/01/2018	\$39.65	\$7.70	\$14.75	\$0.00	\$62.10
	06/01/2019	\$40.65	\$7.70	\$14.75	\$0.00	\$63.10
	12/01/2019	\$41.65	\$7.70	\$14.75	\$0.00	\$64.10
	06/01/2020	\$42.64	\$7.70	\$14.75	\$0.00	\$65.09
	12/01/2020	\$43.62	\$7.70	\$14.75	\$0.00	\$66.07
	06/01/2021	\$44.64	\$7.70	\$14.75	\$0.00	\$67.09
	12/01/2021	\$45.65	\$7.70	\$14.75	\$0.00	\$68.10

For apprentice rates see "Apprentice- LABORER"

FIELD ENG.INST.PERSON-BLDG,SITE,HVY/HWY	05/01/2018	\$42.84	\$10.50	\$15.50	\$0.00	\$68.84
OPERATING ENGINEERS LOCAL 4						

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

FIELD ENG.PARTY CHIEF-BLDG,SITE,HVY/HWY	05/01/2018	\$44.31	\$10.50	\$15.50	\$0.00	\$70.31
OPERATING ENGINEERS LOCAL 4						

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

FIELD ENG.ROD PERSON-BLDG,SITE,HVY/HWY	05/01/2018	\$22.51	\$10.50	\$15.50	\$0.00	\$48.51
OPERATING ENGINEERS LOCAL 4						

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
FIRE ALARM INSTALLER <i>ELECTRICIANS LOCAL 103</i>	03/01/2018	\$50.15	\$13.00	\$17.85	\$0.00	\$81.00
	09/01/2018	\$51.34	\$13.00	\$17.89	\$0.00	\$82.23
	03/01/2019	\$52.53	\$13.00	\$17.93	\$0.00	\$83.46
For apprentice rates see "Apprentice- ELECTRICIAN"						
FIRE ALARM REPAIR / MAINTENANCE / COMMISSIONING <i>ELECTRICIANS</i> <i>LOCAL 103</i>	03/01/2018	\$37.61	\$13.00	\$15.93	\$0.00	\$66.54
	09/01/2018	\$38.51	\$13.00	\$15.96	\$0.00	\$67.47
	03/01/2019	\$39.40	\$13.00	\$15.98	\$0.00	\$68.38
For apprentice rates see "Apprentice- TELECOMMUNICATIONS TECHNICIAN"						
FIREMAN (ASST. ENGINEER) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2017	\$38.57	\$10.50	\$15.50	\$0.00	\$64.57
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FLAGGER & SIGNALER <i>LABORERS - ZONE 1</i>	12/01/2017	\$21.50	\$7.70	\$14.75	\$0.00	\$43.95
	06/01/2018	\$21.50	\$7.70	\$14.75	\$0.00	\$43.95
	12/01/2018	\$22.50	\$7.70	\$14.75	\$0.00	\$44.95
	06/01/2019	\$22.50	\$7.70	\$14.75	\$0.00	\$44.95
	12/01/2019	\$23.50	\$7.70	\$14.75	\$0.00	\$45.95
	06/01/2020	\$23.50	\$7.70	\$14.75	\$0.00	\$45.95
	12/01/2020	\$24.50	\$7.70	\$14.75	\$0.00	\$46.95
	06/01/2021	\$24.50	\$7.70	\$14.75	\$0.00	\$46.95
	12/01/2021	\$24.50	\$7.70	\$14.75	\$0.00	\$46.95
For apprentice rates see "Apprentice- LABORER"						
FLOORCOVERER <i>FLOORCOVERERS LOCAL 2168 ZONE 1</i>	03/01/2016	\$42.13	\$9.80	\$17.62	\$0.00	\$69.55

Apprentice - FLOORCOVERER - Local 2168 Zone 1

Effective Date - 03/01/2016

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.07	\$9.80	\$1.79	\$0.00	\$32.66
2	55	\$23.17	\$9.80	\$1.79	\$0.00	\$34.76
3	60	\$25.28	\$9.80	\$12.25	\$0.00	\$47.33
4	65	\$27.38	\$9.80	\$12.25	\$0.00	\$49.43
5	70	\$29.49	\$9.80	\$14.04	\$0.00	\$53.33
6	75	\$31.60	\$9.80	\$14.04	\$0.00	\$55.44
7	80	\$33.70	\$9.80	\$15.83	\$0.00	\$59.33
8	85	\$35.81	\$9.80	\$15.83	\$0.00	\$61.44

Notes: Steps are 750 hrs.
% After 09/1/17; 45/45/55/55/70/70/80/80 (1500hr Steps)
Step 1&2 \$30.55/ 3&4 \$36.49/ 5&6 \$53.33/ 7&8 \$59.33

Apprentice to Journeyworker Ratio:1:1

FORK LIFT/CHERRY PICKER <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2017	\$46.63	\$10.50	\$15.50	\$0.00	\$72.63
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
GENERATOR/LIGHTING PLANT/HEATERS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2017	\$31.80	\$10.50	\$15.50	\$0.00	\$57.80
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
GLAZIER (GLASS PLANK/AIR BARRIER/INTERIOR SYSTEMS) <i>GLAZIERS LOCAL 35 (ZONE 2)</i>	01/01/2018	\$39.16	\$8.10	\$19.55	\$0.00	\$66.81
	07/01/2018	\$40.26	\$8.10	\$19.55	\$0.00	\$67.91
	01/01/2019	\$41.36	\$8.10	\$19.55	\$0.00	\$69.01
	07/01/2019	\$42.46	\$8.10	\$19.55	\$0.00	\$70.11
	01/01/2020	\$43.56	\$8.10	\$19.55	\$0.00	\$71.21
	07/01/2020	\$44.66	\$8.10	\$19.55	\$0.00	\$72.31
	01/01/2021	\$45.76	\$8.10	\$19.55	\$0.00	\$73.41

Apprentice - GLAZIER - Local 35 Zone 2

Effective Date - 01/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.58	\$8.10	\$0.00	\$0.00	\$27.68
2	55	\$21.54	\$8.10	\$5.06	\$0.00	\$34.70
3	60	\$23.50	\$8.10	\$5.52	\$0.00	\$37.12
4	65	\$25.45	\$8.10	\$5.98	\$0.00	\$39.53
5	70	\$27.41	\$8.10	\$16.79	\$0.00	\$52.30
6	75	\$29.37	\$8.10	\$17.25	\$0.00	\$54.72
7	80	\$31.33	\$8.10	\$17.71	\$0.00	\$57.14
8	90	\$35.24	\$8.10	\$18.63	\$0.00	\$61.97

Effective Date - 07/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.13	\$8.10	\$0.00	\$0.00	\$28.23
2	55	\$22.14	\$8.10	\$5.06	\$0.00	\$35.30
3	60	\$24.16	\$8.10	\$5.52	\$0.00	\$37.78
4	65	\$26.17	\$8.10	\$5.98	\$0.00	\$40.25
5	70	\$28.18	\$8.10	\$16.79	\$0.00	\$53.07
6	75	\$30.20	\$8.10	\$17.25	\$0.00	\$55.55
7	80	\$32.21	\$8.10	\$17.71	\$0.00	\$58.02
8	90	\$36.23	\$8.10	\$18.63	\$0.00	\$62.96

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

HOISTING ENGINEER/CRANES/GRADALLS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2017	\$46.63	\$10.50	\$15.50	\$0.00	\$72.63
---	------------	---------	---------	---------	--------	---------

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
----------------	----------------	-----------	--------	---------	------------------------------	------------

Apprentice - OPERATING ENGINEERS - Local 4

Effective Date - 12/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$25.65	\$10.50	\$0.00	\$0.00	\$36.15
2	60	\$27.98	\$10.50	\$15.50	\$0.00	\$53.98
3	65	\$30.31	\$10.50	\$15.50	\$0.00	\$56.31
4	70	\$32.64	\$10.50	\$15.50	\$0.00	\$58.64
5	75	\$34.97	\$10.50	\$15.50	\$0.00	\$60.97
6	80	\$37.30	\$10.50	\$15.50	\$0.00	\$63.30
7	85	\$39.64	\$10.50	\$15.50	\$0.00	\$65.64
8	90	\$41.97	\$10.50	\$15.50	\$0.00	\$67.97

Notes:

Apprentice to Journeyworker Ratio:1:6

HVAC (DUCTWORK) <i>SHEETMETAL WORKERS LOCAL 17 - A</i>	02/01/2018	\$44.11	\$12.20	\$24.12	\$2.41	\$82.84
For apprentice rates see "Apprentice- SHEET METAL WORKER"						
HVAC (ELECTRICAL CONTROLS) <i>ELECTRICIANS LOCAL 103</i>	03/01/2018	\$50.15	\$13.00	\$17.85	\$0.00	\$81.00
	09/01/2018	\$51.34	\$13.00	\$17.89	\$0.00	\$82.23
	03/01/2019	\$52.53	\$13.00	\$17.93	\$0.00	\$83.46
For apprentice rates see "Apprentice- ELECTRICIAN"						
HVAC (TESTING AND BALANCING - AIR) <i>SHEETMETAL WORKERS LOCAL 17 - A</i>	02/01/2018	\$44.11	\$12.20	\$24.12	\$2.41	\$82.84
For apprentice rates see "Apprentice- SHEET METAL WORKER"						
HVAC (TESTING AND BALANCING -WATER) <i>PIPEFITTERS LOCAL 537</i>	03/01/2017	\$51.19	\$9.70	\$18.14	\$0.00	\$79.03
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HVAC MECHANIC <i>PIPEFITTERS LOCAL 537</i>	03/01/2017	\$51.19	\$9.70	\$18.14	\$0.00	\$79.03
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HYDRAULIC DRILLS <i>LABORERS - ZONE 1</i>	12/01/2017	\$38.25	\$7.70	\$14.75	\$0.00	\$60.70
	06/01/2018	\$39.20	\$7.70	\$14.75	\$0.00	\$61.65
	12/01/2018	\$40.15	\$7.70	\$14.75	\$0.00	\$62.60
	06/01/2019	\$41.15	\$7.70	\$14.75	\$0.00	\$63.60
	12/01/2019	\$42.15	\$7.70	\$14.75	\$0.00	\$64.60
	06/01/2020	\$43.14	\$7.70	\$14.75	\$0.00	\$65.59
	12/01/2020	\$44.12	\$7.70	\$14.75	\$0.00	\$66.57
	06/01/2021	\$45.14	\$7.70	\$14.75	\$0.00	\$67.59
	12/01/2021	\$46.15	\$7.70	\$14.75	\$0.00	\$68.60
For apprentice rates see "Apprentice- LABORER"						
INSULATOR (PIPES & TANKS) <i>HEAT & FROST INSULATORS LOCAL 6 (BOSTON)</i>	09/01/2017	\$47.09	\$11.75	\$14.20	\$0.00	\$73.04
	09/01/2018	\$49.34	\$11.75	\$14.20	\$0.00	\$75.29
	09/01/2019	\$51.84	\$11.75	\$14.20	\$0.00	\$77.79

Classification

Effective Date

Base Wage

Health

Pension

Supplemental
Unemployment

Total Rate

Apprentice - ASBESTOS INSULATOR (Pipes & Tanks) - Local 6 Boston**Effective Date -** 09/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.55	\$11.75	\$10.45	\$0.00	\$45.75
2	60	\$28.25	\$11.75	\$11.20	\$0.00	\$51.20
3	70	\$32.96	\$11.75	\$11.95	\$0.00	\$56.66
4	80	\$37.67	\$11.75	\$12.70	\$0.00	\$62.12

Effective Date - 09/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.67	\$11.75	\$10.45	\$0.00	\$46.87
2	60	\$29.60	\$11.75	\$11.20	\$0.00	\$52.55
3	70	\$34.54	\$11.75	\$11.95	\$0.00	\$58.24
4	80	\$39.47	\$11.75	\$12.70	\$0.00	\$63.92

Notes:

Steps are 1 year

Apprentice to Journeyworker Ratio:1:4**IRONWORKER/WELDER***IRONWORKERS LOCAL 7 (BOSTON AREA)*

03/16/2017

\$44.65

\$7.80

\$20.85

\$0.00

\$73.30

Apprentice - IRONWORKER - Local 7 Boston**Effective Date -** 03/16/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$26.79	\$7.80	\$20.85	\$0.00	\$55.44
2	70	\$31.26	\$7.80	\$20.85	\$0.00	\$59.91
3	75	\$33.49	\$7.80	\$20.85	\$0.00	\$62.14
4	80	\$35.72	\$7.80	\$20.85	\$0.00	\$64.37
5	85	\$37.95	\$7.80	\$20.85	\$0.00	\$66.60
6	90	\$40.19	\$7.80	\$20.85	\$0.00	\$68.84

Notes:

** Structural 1:6; Ornamental 1:4

Apprentice to Journeyworker Ratio:****JACKHAMMER & PAVING BREAKER OPERATOR***LABORERS - ZONE I*

12/01/2017

\$37.75

\$7.70

\$14.75

\$0.00

\$60.20

06/01/2018

\$38.70

\$7.70

\$14.75

\$0.00

\$61.15

12/01/2018

\$39.65

\$7.70

\$14.75

\$0.00

\$62.10

06/01/2019

\$40.65

\$7.70

\$14.75

\$0.00

\$63.10

12/01/2019

\$41.65

\$7.70

\$14.75

\$0.00

\$64.10

06/01/2020

\$42.64

\$7.70

\$14.75

\$0.00

\$65.09

12/01/2020

\$43.62

\$7.70

\$14.75

\$0.00

\$66.07

06/01/2021

\$44.64

\$7.70

\$14.75

\$0.00

\$67.09

12/01/2021

\$45.65

\$7.70

\$14.75

\$0.00

\$68.10

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- LABORER"						
LABORER	12/01/2017	\$37.50	\$7.70	\$14.75	\$0.00	\$59.95
LABORERS - ZONE 1	06/01/2018	\$38.45	\$7.70	\$14.75	\$0.00	\$60.90
	12/01/2018	\$39.40	\$7.70	\$14.75	\$0.00	\$61.85
	06/01/2019	\$40.40	\$7.70	\$14.75	\$0.00	\$62.85
	12/01/2019	\$41.40	\$7.70	\$14.75	\$0.00	\$63.85
	06/01/2020	\$42.39	\$7.70	\$14.75	\$0.00	\$64.84
	12/01/2020	\$43.37	\$7.70	\$14.75	\$0.00	\$65.82
	06/01/2021	\$44.39	\$7.70	\$14.75	\$0.00	\$66.84
	12/01/2021	\$45.40	\$7.70	\$14.75	\$0.00	\$67.85

Apprentice - LABORER - Zone 1

Effective Date - 12/01/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$22.50	\$7.70	\$14.75	\$0.00	\$44.95
2	70	\$26.25	\$7.70	\$14.75	\$0.00	\$48.70
3	80	\$30.00	\$7.70	\$14.75	\$0.00	\$52.45
4	90	\$33.75	\$7.70	\$14.75	\$0.00	\$56.20

Effective Date - 06/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$23.07	\$7.70	\$14.75	\$0.00	\$45.52
2	70	\$26.92	\$7.70	\$14.75	\$0.00	\$49.37
3	80	\$30.76	\$7.70	\$14.75	\$0.00	\$53.21
4	90	\$34.61	\$7.70	\$14.75	\$0.00	\$57.06

Notes:

Apprentice to Journeyworker Ratio:1:5

LABORER: CARPENTER TENDER	12/01/2017	\$37.50	\$7.70	\$14.75	\$0.00	\$59.95
LABORERS - ZONE 1	06/01/2018	\$38.45	\$7.70	\$14.75	\$0.00	\$60.90
	12/01/2018	\$39.40	\$7.70	\$14.75	\$0.00	\$61.85
	06/01/2019	\$40.40	\$7.70	\$14.75	\$0.00	\$62.85
	12/01/2019	\$41.40	\$7.70	\$14.75	\$0.00	\$63.85
	06/01/2020	\$42.39	\$7.70	\$14.75	\$0.00	\$64.84
	12/01/2020	\$43.37	\$7.70	\$14.75	\$0.00	\$65.82
	06/01/2021	\$44.39	\$7.70	\$14.75	\$0.00	\$66.84
	12/01/2021	\$45.40	\$7.70	\$14.75	\$0.00	\$67.85

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
LABORER: CEMENT FINISHER TENDER <i>LABORERS - ZONE 1</i>	12/01/2017	\$37.50	\$7.70	\$14.75	\$0.00	\$59.95
	06/01/2018	\$38.45	\$7.70	\$14.75	\$0.00	\$60.90
	12/01/2018	\$39.40	\$7.70	\$14.75	\$0.00	\$61.85
	06/01/2019	\$40.40	\$7.70	\$14.75	\$0.00	\$62.85
	12/01/2019	\$41.40	\$7.70	\$14.75	\$0.00	\$63.85
	06/01/2020	\$42.39	\$7.70	\$14.75	\$0.00	\$64.84
	12/01/2020	\$43.37	\$7.70	\$14.75	\$0.00	\$65.82
	06/01/2021	\$44.39	\$7.70	\$14.75	\$0.00	\$66.84
	12/01/2021	\$45.40	\$7.70	\$14.75	\$0.00	\$67.85
For apprentice rates see "Apprentice- LABORER"						
LABORER: HAZARDOUS WASTE/ASBESTOS REMOVER <i>LABORERS - ZONE 1</i>	12/01/2017	\$37.65	\$7.70	\$14.75	\$0.00	\$60.10
	06/01/2018	\$38.60	\$7.70	\$14.75	\$0.00	\$61.05
	12/01/2018	\$39.55	\$7.70	\$14.75	\$0.00	\$62.00
	06/01/2019	\$40.55	\$7.70	\$14.75	\$0.00	\$63.00
	12/01/2019	\$41.55	\$7.70	\$14.75	\$0.00	\$64.00
For apprentice rates see "Apprentice- LABORER"						
LABORER: MASON TENDER <i>LABORERS - ZONE 1</i>	12/01/2017	\$37.75	\$7.70	\$14.75	\$0.00	\$60.20
	06/01/2018	\$38.70	\$7.70	\$14.75	\$0.00	\$61.15
	12/01/2018	\$39.65	\$7.70	\$14.75	\$0.00	\$62.10
	06/01/2019	\$40.65	\$7.70	\$14.75	\$0.00	\$63.10
	12/01/2019	\$41.65	\$7.70	\$14.75	\$0.00	\$64.10
	06/01/2020	\$42.64	\$7.70	\$14.75	\$0.00	\$65.09
	12/01/2020	\$43.62	\$7.70	\$14.75	\$0.00	\$66.07
	06/01/2021	\$44.64	\$7.70	\$14.75	\$0.00	\$67.09
	12/01/2021	\$45.65	\$7.70	\$14.75	\$0.00	\$68.10
For apprentice rates see "Apprentice- LABORER"						
LABORER: MULTI-TRADE TENDER <i>LABORERS - ZONE 1</i>	12/01/2017	\$37.50	\$7.70	\$14.75	\$0.00	\$59.95
	06/01/2018	\$38.45	\$7.70	\$14.75	\$0.00	\$60.90
	12/01/2018	\$39.40	\$7.70	\$14.75	\$0.00	\$61.85
	06/01/2019	\$40.40	\$7.70	\$14.75	\$0.00	\$62.85
	12/01/2019	\$41.40	\$7.70	\$14.75	\$0.00	\$63.85
	06/01/2020	\$42.39	\$7.70	\$14.75	\$0.00	\$64.84
	12/01/2020	\$43.37	\$7.70	\$14.75	\$0.00	\$65.82
	06/01/2021	\$44.39	\$7.70	\$14.75	\$0.00	\$66.84
	12/01/2021	\$45.40	\$7.70	\$14.75	\$0.00	\$67.85
For apprentice rates see "Apprentice- LABORER"						
LABORER: TREE REMOVER <i>LABORERS - ZONE 1</i>	12/01/2017	\$37.50	\$7.70	\$14.75	\$0.00	\$59.95
	06/01/2018	\$38.45	\$7.70	\$14.75	\$0.00	\$60.90
	12/01/2018	\$39.40	\$7.70	\$14.75	\$0.00	\$61.85
	06/01/2019	\$40.40	\$7.70	\$14.75	\$0.00	\$62.85
	12/01/2019	\$41.40	\$7.70	\$14.75	\$0.00	\$63.85
	06/01/2020	\$42.39	\$7.70	\$14.75	\$0.00	\$64.84
	12/01/2020	\$43.37	\$7.70	\$14.75	\$0.00	\$65.82
	06/01/2021	\$44.39	\$7.70	\$14.75	\$0.00	\$66.84
	12/01/2021	\$45.40	\$7.70	\$14.75	\$0.00	\$67.85
This classification applies to all tree work associated with the removal of standing trees, and trimming and removal of branches and limbs when the work is not done for a utility company for the purpose of operation, maintenance or repair of utility company equipment. For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
LASER BEAM OPERATOR	12/01/2017	\$37.75	\$7.70	\$14.75	\$0.00	\$60.20
LABORERS - ZONE 1	06/01/2018	\$38.70	\$7.70	\$14.75	\$0.00	\$61.15
	12/01/2018	\$39.65	\$7.70	\$14.75	\$0.00	\$62.10
	06/01/2019	\$40.65	\$7.70	\$14.75	\$0.00	\$63.10
	12/01/2019	\$41.65	\$7.70	\$14.75	\$0.00	\$64.10
	06/01/2020	\$42.64	\$7.70	\$14.75	\$0.00	\$65.09
	12/01/2020	\$43.62	\$7.70	\$14.75	\$0.00	\$66.07
	06/01/2021	\$44.64	\$7.70	\$14.75	\$0.00	\$67.09
	12/01/2021	\$45.65	\$7.70	\$14.75	\$0.00	\$68.10

For apprentice rates see "Apprentice- LABORER"

MARBLE & TILE FINISHERS	02/01/2018	\$39.82	\$10.75	\$18.34	\$0.00	\$68.91
BRICKLAYERS LOCAL 3 - MARBLE & TILE	08/01/2018	\$40.90	\$10.75	\$18.47	\$0.00	\$70.12
	02/01/2019	\$41.41	\$10.75	\$18.47	\$0.00	\$70.63
	08/01/2019	\$42.49	\$10.75	\$18.61	\$0.00	\$71.85
	02/01/2020	\$43.00	\$10.75	\$18.61	\$0.00	\$72.36
	08/01/2020	\$44.08	\$10.75	\$18.76	\$0.00	\$73.59
	02/01/2021	\$44.59	\$10.75	\$18.76	\$0.00	\$74.10
	08/01/2021	\$45.71	\$10.75	\$18.92	\$0.00	\$75.38
	02/01/2022	\$46.18	\$10.75	\$18.92	\$0.00	\$75.85

Apprentice - MARBLE & TILE FINISHER - Local 3 Marble & Tile

Effective Date - 02/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.91	\$10.75	\$18.34	\$0.00	\$49.00
2	60	\$23.89	\$10.75	\$18.34	\$0.00	\$52.98
3	70	\$27.87	\$10.75	\$18.34	\$0.00	\$56.96
4	80	\$31.86	\$10.75	\$18.34	\$0.00	\$60.95
5	90	\$35.84	\$10.75	\$18.34	\$0.00	\$64.93

Effective Date - 08/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.45	\$10.75	\$18.47	\$0.00	\$49.67
2	60	\$24.54	\$10.75	\$18.47	\$0.00	\$53.76
3	70	\$28.63	\$10.75	\$18.47	\$0.00	\$57.85
4	80	\$32.72	\$10.75	\$18.47	\$0.00	\$61.94
5	90	\$36.81	\$10.75	\$18.47	\$0.00	\$66.03

Notes:

Apprentice to Journeyworker Ratio:1:3

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
MARBLE MASONS, TILELAYERS & TERRAZZO MECH <i>BRICKLAYERS LOCAL 3 - MARBLE & TILE</i>	02/01/2018	\$52.10	\$10.75	\$20.03	\$0.00	\$82.88
	08/01/2018	\$53.45	\$10.75	\$20.16	\$0.00	\$84.36
	02/01/2019	\$54.07	\$10.75	\$20.16	\$0.00	\$84.98
	08/01/2019	\$55.42	\$10.75	\$20.30	\$0.00	\$86.47
	02/01/2020	\$56.05	\$10.75	\$20.30	\$0.00	\$87.10
	08/01/2020	\$57.40	\$10.75	\$20.45	\$0.00	\$88.60
	02/01/2021	\$58.04	\$10.75	\$20.45	\$0.00	\$89.24
	08/01/2021	\$59.44	\$10.75	\$20.61	\$0.00	\$90.80
	02/01/2022	\$60.01	\$10.75	\$20.61	\$0.00	\$91.37

Apprentice - MARBLE-TILE-TERRAZZO MECHANIC - Local 3 Marble & Tile

Effective Date - 02/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.05	\$10.75	\$20.03	\$0.00	\$56.83
2	60	\$31.26	\$10.75	\$20.03	\$0.00	\$62.04
3	70	\$36.47	\$10.75	\$20.03	\$0.00	\$67.25
4	80	\$41.68	\$10.75	\$20.03	\$0.00	\$72.46
5	90	\$46.89	\$10.75	\$20.03	\$0.00	\$77.67

Effective Date - 08/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.73	\$10.75	\$20.16	\$0.00	\$57.64
2	60	\$32.07	\$10.75	\$20.16	\$0.00	\$62.98
3	70	\$37.42	\$10.75	\$20.16	\$0.00	\$68.33
4	80	\$42.76	\$10.75	\$20.16	\$0.00	\$73.67
5	90	\$48.11	\$10.75	\$20.16	\$0.00	\$79.02

Notes:

Apprentice to Journeyworker Ratio:1:5

MECH. SWEEPER OPERATOR (ON CONST. SITES) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2017	\$46.17	\$10.50	\$15.50	\$0.00	\$72.17
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
MECHANICS MAINTENANCE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2017	\$46.17	\$10.50	\$15.50	\$0.00	\$72.17
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
MILLWRIGHT (Zone 1) <i>MILLWRIGHTS LOCAL 1121 - Zone 1</i>	04/01/2018	\$40.42	\$9.90	\$18.50	\$0.00	\$68.82
	10/01/2018	\$41.32	\$9.90	\$18.50	\$0.00	\$69.72
	04/01/2019	\$42.22	\$9.90	\$18.50	\$0.00	\$70.62

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
----------------	----------------	-----------	--------	---------	------------------------------	------------

Apprentice - MILLWRIGHT - Local 1121 Zone 1

Effective Date - 04/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$22.23	\$9.90	\$5.31	\$0.00	\$37.44
2	65	\$26.27	\$9.90	\$15.13	\$0.00	\$51.30
3	75	\$30.32	\$9.90	\$16.10	\$0.00	\$56.32
4	85	\$34.36	\$9.90	\$17.06	\$0.00	\$61.32

Notes:

Steps are 2,000 hours

Apprentice to Journeyworker Ratio:1:5

MORTAR MIXER LABORERS - ZONE 1	12/01/2017	\$37.75	\$7.70	\$14.75	\$0.00	\$60.20
	06/01/2018	\$38.70	\$7.70	\$14.75	\$0.00	\$61.15
	12/01/2018	\$39.65	\$7.70	\$14.75	\$0.00	\$62.10
	06/01/2019	\$40.65	\$7.70	\$14.75	\$0.00	\$63.10
	12/01/2019	\$41.65	\$7.70	\$14.75	\$0.00	\$64.10
	06/01/2020	\$42.64	\$7.70	\$14.75	\$0.00	\$65.09
	12/01/2020	\$43.62	\$7.70	\$14.75	\$0.00	\$66.07
	06/01/2021	\$44.64	\$7.70	\$14.75	\$0.00	\$67.09
	12/01/2021	\$45.65	\$7.70	\$14.75	\$0.00	\$68.10
For apprentice rates see "Apprentice- LABORER"						
OILER (OTHER THAN TRUCK CRANES,GRADALLS) OPERATING ENGINEERS LOCAL 4	12/01/2017	\$23.24	\$10.50	\$15.50	\$0.00	\$49.24
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
OILER (TRUCK CRANES, GRADALLS) OPERATING ENGINEERS LOCAL 4	12/01/2017	\$27.40	\$10.50	\$15.50	\$0.00	\$53.40
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
OTHER POWER DRIVEN EQUIPMENT - CLASS II OPERATING ENGINEERS LOCAL 4	12/01/2017	\$46.17	\$10.50	\$15.50	\$0.00	\$72.17
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PAINTER (BRIDGES/TANKS) PAINTERS LOCAL 35 - ZONE 2	01/01/2018	\$49.66	\$8.10	\$19.55	\$0.00	\$77.31
	07/01/2018	\$50.76	\$8.10	\$19.55	\$0.00	\$78.41
	01/01/2019	\$51.86	\$8.10	\$19.55	\$0.00	\$79.51
	07/01/2019	\$52.96	\$8.10	\$19.55	\$0.00	\$80.61
	01/01/2020	\$54.06	\$8.10	\$19.55	\$0.00	\$81.71
	07/01/2020	\$55.16	\$8.10	\$19.55	\$0.00	\$82.81
	01/01/2021	\$56.26	\$8.10	\$19.55	\$0.00	\$83.91

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - PAINTER Local 35 - BRIDGES/TANKS
Effective Date - 01/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.83	\$8.10	\$0.00	\$0.00	\$32.93
2	55	\$27.31	\$8.10	\$5.06	\$0.00	\$40.47
3	60	\$29.80	\$8.10	\$5.52	\$0.00	\$43.42
4	65	\$32.28	\$8.10	\$5.98	\$0.00	\$46.36
5	70	\$34.76	\$8.10	\$16.79	\$0.00	\$59.65
6	75	\$37.25	\$8.10	\$17.25	\$0.00	\$62.60
7	80	\$39.73	\$8.10	\$17.71	\$0.00	\$65.54
8	90	\$44.69	\$8.10	\$18.63	\$0.00	\$71.42

Effective Date - 07/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.38	\$8.10	\$0.00	\$0.00	\$33.48
2	55	\$27.92	\$8.10	\$5.06	\$0.00	\$41.08
3	60	\$30.46	\$8.10	\$5.52	\$0.00	\$44.08
4	65	\$32.99	\$8.10	\$5.98	\$0.00	\$47.07
5	70	\$35.53	\$8.10	\$16.79	\$0.00	\$60.42
6	75	\$38.07	\$8.10	\$17.25	\$0.00	\$63.42
7	80	\$40.61	\$8.10	\$17.71	\$0.00	\$66.42
8	90	\$45.68	\$8.10	\$18.63	\$0.00	\$72.41

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (SPRAY OR SANDBLAST, NEW) *	01/01/2018	\$40.56	\$8.10	\$19.55	\$0.00	\$68.21
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. PAINTERS LOCAL 35 - ZONE 2	07/01/2018	\$41.66	\$8.10	\$19.55	\$0.00	\$69.31
	01/01/2019	\$42.76	\$8.10	\$19.55	\$0.00	\$70.41
	07/01/2019	\$43.86	\$8.10	\$19.55	\$0.00	\$71.51
	01/01/2020	\$44.96	\$8.10	\$19.55	\$0.00	\$72.61
	07/01/2020	\$46.06	\$8.10	\$19.55	\$0.00	\$73.71
	01/01/2021	\$47.16	\$8.10	\$19.55	\$0.00	\$74.81

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - PAINTER Local 35 Zone 2 - Spray/Sandblast - New
Effective Date - 01/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.28	\$8.10	\$0.00	\$0.00	\$28.38
2	55	\$22.31	\$8.10	\$5.06	\$0.00	\$35.47
3	60	\$24.34	\$8.10	\$5.52	\$0.00	\$37.96
4	65	\$26.36	\$8.10	\$5.98	\$0.00	\$40.44
5	70	\$28.39	\$8.10	\$16.79	\$0.00	\$53.28
6	75	\$30.42	\$8.10	\$17.25	\$0.00	\$55.77
7	80	\$32.45	\$8.10	\$17.71	\$0.00	\$58.26
8	90	\$36.50	\$8.10	\$18.63	\$0.00	\$63.23

Effective Date - 07/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.83	\$8.10	\$0.00	\$0.00	\$28.93
2	55	\$22.91	\$8.10	\$5.06	\$0.00	\$36.07
3	60	\$25.00	\$8.10	\$5.52	\$0.00	\$38.62
4	65	\$27.08	\$8.10	\$5.98	\$0.00	\$41.16
5	70	\$29.16	\$8.10	\$16.79	\$0.00	\$54.05
6	75	\$31.25	\$8.10	\$17.25	\$0.00	\$56.60
7	80	\$33.33	\$8.10	\$17.71	\$0.00	\$59.14
8	90	\$37.49	\$8.10	\$18.63	\$0.00	\$64.22

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (SPRAY OR SANDBLAST, REPAINT)	01/01/2018	\$38.62	\$8.10	\$19.55	\$0.00	\$66.27
PAINTERS LOCAL 35 - ZONE 2	07/01/2018	\$39.72	\$8.10	\$19.55	\$0.00	\$67.37
	01/01/2019	\$40.82	\$8.10	\$19.55	\$0.00	\$68.47
	07/01/2019	\$41.92	\$8.10	\$19.55	\$0.00	\$69.57
	01/01/2020	\$43.02	\$8.10	\$19.55	\$0.00	\$70.67
	07/01/2020	\$44.12	\$8.10	\$19.55	\$0.00	\$71.77
	01/01/2021	\$45.22	\$8.10	\$19.55	\$0.00	\$72.87

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - PAINTER Local 35 Zone 2 - Spray/Sandblast - Repaint
Effective Date - 01/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.31	\$8.10	\$0.00	\$0.00	\$27.41
2	55	\$21.24	\$8.10	\$5.06	\$0.00	\$34.40
3	60	\$23.17	\$8.10	\$5.52	\$0.00	\$36.79
4	65	\$25.10	\$8.10	\$5.98	\$0.00	\$39.18
5	70	\$27.03	\$8.10	\$16.79	\$0.00	\$51.92
6	75	\$28.97	\$8.10	\$17.25	\$0.00	\$54.32
7	80	\$30.90	\$8.10	\$17.71	\$0.00	\$56.71
8	90	\$34.76	\$8.10	\$18.63	\$0.00	\$61.49

Effective Date - 07/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.86	\$8.10	\$0.00	\$0.00	\$27.96
2	55	\$21.85	\$8.10	\$5.06	\$0.00	\$35.01
3	60	\$23.83	\$8.10	\$5.52	\$0.00	\$37.45
4	65	\$25.82	\$8.10	\$5.98	\$0.00	\$39.90
5	70	\$27.80	\$8.10	\$16.79	\$0.00	\$52.69
6	75	\$29.79	\$8.10	\$17.25	\$0.00	\$55.14
7	80	\$31.78	\$8.10	\$17.71	\$0.00	\$57.59
8	90	\$35.75	\$8.10	\$18.63	\$0.00	\$62.48

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (TRAFFIC MARKINGS)	12/01/2017	\$37.50	\$7.70	\$14.75	\$0.00	\$59.95
LABORERS - ZONE 1	06/01/2018	\$38.45	\$7.70	\$14.75	\$0.00	\$60.90
	12/01/2018	\$39.40	\$7.70	\$14.75	\$0.00	\$61.85
	06/01/2019	\$40.40	\$7.70	\$14.75	\$0.00	\$62.85
	12/01/2019	\$41.40	\$7.70	\$14.75	\$0.00	\$63.85
	06/01/2020	\$42.39	\$7.70	\$14.75	\$0.00	\$64.84
	12/01/2020	\$43.37	\$7.70	\$14.75	\$0.00	\$65.82
	06/01/2021	\$44.39	\$7.70	\$14.75	\$0.00	\$66.84
	12/01/2021	\$45.40	\$7.70	\$14.75	\$0.00	\$67.85

For Apprentice rates see "Apprentice- LABORER"

PAINTER / TAPER (BRUSH, NEW) *	01/01/2018	\$39.16	\$8.10	\$19.55	\$0.00	\$66.81
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. PAINTERS LOCAL 35 - ZONE 2	07/01/2018	\$40.26	\$8.10	\$19.55	\$0.00	\$67.91
	01/01/2019	\$41.36	\$8.10	\$19.55	\$0.00	\$69.01
	07/01/2019	\$42.46	\$8.10	\$19.55	\$0.00	\$70.11
	01/01/2020	\$43.56	\$8.10	\$19.55	\$0.00	\$71.21
	07/01/2020	\$44.66	\$8.10	\$19.55	\$0.00	\$72.31
	01/01/2021	\$45.76	\$8.10	\$19.55	\$0.00	\$73.41

Classification

Effective Date Base Wage Health Pension Supplemental Unemployment Total Rate

Apprentice - PAINTER - Local 35 Zone 2 - BRUSH NEW
Effective Date - 01/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.58	\$8.10	\$0.00	\$0.00	\$27.68
2	55	\$21.54	\$8.10	\$5.06	\$0.00	\$34.70
3	60	\$23.50	\$8.10	\$5.52	\$0.00	\$37.12
4	65	\$25.45	\$8.10	\$5.98	\$0.00	\$39.53
5	70	\$27.41	\$8.10	\$16.79	\$0.00	\$52.30
6	75	\$29.37	\$8.10	\$17.25	\$0.00	\$54.72
7	80	\$31.33	\$8.10	\$17.71	\$0.00	\$57.14
8	90	\$35.24	\$8.10	\$18.63	\$0.00	\$61.97

Effective Date - 07/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$20.13	\$8.10	\$0.00	\$0.00	\$28.23
2	55	\$22.14	\$8.10	\$5.06	\$0.00	\$35.30
3	60	\$24.16	\$8.10	\$5.52	\$0.00	\$37.78
4	65	\$26.17	\$8.10	\$5.98	\$0.00	\$40.25
5	70	\$28.18	\$8.10	\$16.79	\$0.00	\$53.07
6	75	\$30.20	\$8.10	\$17.25	\$0.00	\$55.55
7	80	\$32.21	\$8.10	\$17.71	\$0.00	\$58.02
8	90	\$36.23	\$8.10	\$18.63	\$0.00	\$62.96

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER / TAPER (BRUSH, REPAINT)	01/01/2018	\$37.22	\$8.10	\$19.55	\$0.00	\$64.87
PAINTERS LOCAL 35 - ZONE 2	07/01/2018	\$38.32	\$8.10	\$19.55	\$0.00	\$65.97
	01/01/2019	\$39.42	\$8.10	\$19.55	\$0.00	\$67.07
	07/01/2019	\$40.52	\$8.10	\$19.55	\$0.00	\$68.17
	01/01/2020	\$41.62	\$8.10	\$19.55	\$0.00	\$69.27
	07/01/2020	\$42.72	\$8.10	\$19.55	\$0.00	\$70.37
	01/01/2021	\$43.82	\$8.10	\$19.55	\$0.00	\$71.47

Classification

Effective Date Base Wage Health Pension Supplemental
Unemployment Total Rate

Apprentice - PAINTER Local 35 Zone 2 - BRUSH REPAINT
Effective Date - 01/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$18.61	\$8.10	\$0.00	\$0.00	\$26.71
2	55	\$20.47	\$8.10	\$5.06	\$0.00	\$33.63
3	60	\$22.33	\$8.10	\$5.52	\$0.00	\$35.95
4	65	\$24.19	\$8.10	\$5.98	\$0.00	\$38.27
5	70	\$26.05	\$8.10	\$16.79	\$0.00	\$50.94
6	75	\$27.92	\$8.10	\$17.25	\$0.00	\$53.27
7	80	\$29.78	\$8.10	\$17.71	\$0.00	\$55.59
8	90	\$33.50	\$8.10	\$18.63	\$0.00	\$60.23

Effective Date - 07/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.16	\$8.10	\$0.00	\$0.00	\$27.26
2	55	\$21.08	\$8.10	\$5.06	\$0.00	\$34.24
3	60	\$22.99	\$8.10	\$5.52	\$0.00	\$36.61
4	65	\$24.91	\$8.10	\$5.98	\$0.00	\$38.99
5	70	\$26.82	\$8.10	\$16.79	\$0.00	\$51.71
6	75	\$28.74	\$8.10	\$17.25	\$0.00	\$54.09
7	80	\$30.66	\$8.10	\$17.71	\$0.00	\$56.47
8	90	\$34.49	\$8.10	\$18.63	\$0.00	\$61.22

Notes:

Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PANEL & PICKUP TRUCKS DRIVER <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2016	\$33.08	\$10.91	\$10.89	\$0.00	\$54.88
PIER AND DOCK CONSTRUCTOR (UNDERPINNING AND DECK) <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2017	\$44.27	\$9.90	\$21.15	\$0.00	\$75.32
	08/01/2018	\$46.57	\$9.90	\$21.15	\$0.00	\$77.62
	08/01/2019	\$48.94	\$9.90	\$21.15	\$0.00	\$79.99
For apprentice rates see "Apprentice- PILE DRIVER"						
PILE DRIVER <i>PILE DRIVER LOCAL 56 (ZONE 1)</i>	08/01/2017	\$44.27	\$9.90	\$21.15	\$0.00	\$75.32
	08/01/2018	\$46.57	\$9.90	\$21.15	\$0.00	\$77.62
	08/01/2019	\$48.94	\$9.90	\$21.15	\$0.00	\$79.99

Apprentice - PILE DRIVER - Local 56 Zone 1**Effective Date - 08/01/2017**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.14	\$9.90	\$21.15	\$0.00	\$53.19
2	60	\$26.56	\$9.90	\$21.15	\$0.00	\$57.61
3	70	\$30.99	\$9.90	\$21.15	\$0.00	\$62.04
4	75	\$33.20	\$9.90	\$21.15	\$0.00	\$64.25
5	80	\$35.42	\$9.90	\$21.15	\$0.00	\$66.47
6	80	\$35.42	\$9.90	\$21.15	\$0.00	\$66.47
7	90	\$39.84	\$9.90	\$21.15	\$0.00	\$70.89
8	90	\$39.84	\$9.90	\$21.15	\$0.00	\$70.89

Effective Date - 08/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.29	\$9.90	\$21.15	\$0.00	\$54.34
2	60	\$27.94	\$9.90	\$21.15	\$0.00	\$58.99
3	70	\$32.60	\$9.90	\$21.15	\$0.00	\$63.65
4	75	\$34.93	\$9.90	\$21.15	\$0.00	\$65.98
5	80	\$37.26	\$9.90	\$21.15	\$0.00	\$68.31
6	80	\$37.26	\$9.90	\$21.15	\$0.00	\$68.31
7	90	\$41.91	\$9.90	\$21.15	\$0.00	\$72.96
8	90	\$41.91	\$9.90	\$21.15	\$0.00	\$72.96

Notes:**Apprentice to Journeyworker Ratio:1:5**

PIPEFITTER & STEAMFITTER

03/01/2017

\$51.19

\$9.70

\$18.14

\$0.00

\$79.03

PIPEFITTERS LOCAL 537

Apprentice - PIPEFITTER - Local 537**Effective Date - 03/01/2017**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$20.48	\$9.70	\$7.50	\$0.00	\$37.68
2	45	\$23.04	\$9.70	\$18.14	\$0.00	\$50.88
3	60	\$30.71	\$9.70	\$18.14	\$0.00	\$58.55
4	70	\$35.83	\$9.70	\$18.14	\$0.00	\$63.67
5	80	\$40.95	\$9.70	\$18.14	\$0.00	\$68.79

Notes:

** 1:3; 3:15; 1:10 thereafter / Steps are 1 yr.

Refrig/AC Mechanic **1:1;1:2;2:4;3:6;4:8;5:10;6:12;7:14;8:17;9:20;10:23(Max)

Apprentice to Journeyworker Ratio:**

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
PIPELAYER <i>LABORERS - ZONE 1</i>	12/01/2017	\$37.75	\$7.70	\$14.75	\$0.00	\$60.20
	06/01/2018	\$38.70	\$7.70	\$14.75	\$0.00	\$61.15
	12/01/2018	\$39.65	\$7.70	\$14.75	\$0.00	\$62.10
	06/01/2019	\$40.65	\$7.70	\$14.75	\$0.00	\$63.10
	12/01/2019	\$41.65	\$7.70	\$14.75	\$0.00	\$64.10
	06/01/2020	\$42.64	\$7.70	\$14.75	\$0.00	\$65.09
	12/01/2020	\$43.62	\$7.70	\$14.75	\$0.00	\$66.07
	06/01/2021	\$44.64	\$7.70	\$14.75	\$0.00	\$67.09
	12/01/2021	\$45.65	\$7.70	\$14.75	\$0.00	\$68.10

For apprentice rates see "Apprentice- LABORER"

PLUMBERS & GASFITTERS <i>PLUMBERS & GASFITTERS LOCAL 12</i>	03/01/2018	\$54.69	\$11.57	\$15.76	\$0.00	\$82.02
	09/01/2018	\$56.19	\$11.57	\$15.76	\$0.00	\$83.52
	03/01/2019	\$57.69	\$11.57	\$15.76	\$0.00	\$85.02
	09/01/2019	\$59.19	\$11.57	\$15.76	\$0.00	\$86.52
	03/01/2020	\$60.69	\$11.57	\$15.76	\$0.00	\$88.02
	09/01/2020	\$62.19	\$11.57	\$15.76	\$0.00	\$89.52
	03/01/2021	\$63.69	\$11.57	\$15.76	\$0.00	\$91.02

Apprentice - PLUMBER/GASFITTER - Local 12

Effective Date - 03/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$19.14	\$11.57	\$5.72	\$0.00	\$36.43
2	40	\$21.88	\$11.57	\$6.49	\$0.00	\$39.94
3	55	\$30.08	\$11.57	\$8.81	\$0.00	\$50.46
4	65	\$35.55	\$11.57	\$10.36	\$0.00	\$57.48
5	75	\$41.02	\$11.57	\$11.90	\$0.00	\$64.49

Effective Date - 09/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$19.67	\$11.57	\$5.72	\$0.00	\$36.96
2	40	\$22.48	\$11.57	\$6.49	\$0.00	\$40.54
3	55	\$30.90	\$11.57	\$8.82	\$0.00	\$51.29
4	65	\$36.52	\$11.57	\$10.36	\$0.00	\$58.45
5	75	\$42.14	\$11.57	\$11.90	\$0.00	\$65.61

Notes:

** 1:2; 2:6; 3:10; 4:14; 5:19/Steps are 1 yr
Step4 with lic\$61.00, Step5 with lic\$67.99

Apprentice to Journeyworker Ratio:**

PNEUMATIC CONTROLS (TEMP.) <i>PIPEFITTERS LOCAL 537</i>	03/01/2017	\$51.19	\$9.70	\$18.14	\$0.00	\$79.03
--	------------	---------	--------	---------	--------	---------

For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
PNEUMATIC DRILL/TOOL OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2017	\$37.75	\$7.70	\$14.75	\$0.00	\$60.20
	06/01/2018	\$38.70	\$7.70	\$14.75	\$0.00	\$61.15
	12/01/2018	\$39.65	\$7.70	\$14.75	\$0.00	\$62.10
	06/01/2019	\$40.65	\$7.70	\$14.75	\$0.00	\$63.10
	12/01/2019	\$41.65	\$7.70	\$14.75	\$0.00	\$64.10
	06/01/2020	\$42.64	\$7.70	\$14.75	\$0.00	\$65.09
	12/01/2020	\$43.62	\$7.70	\$14.75	\$0.00	\$66.07
	06/01/2021	\$44.64	\$7.70	\$14.75	\$0.00	\$67.09
	12/01/2021	\$45.65	\$7.70	\$14.75	\$0.00	\$68.10
For apprentice rates see "Apprentice- LABORER"						
POWDERMAN & BLASTER <i>LABORERS - ZONE 1</i>	12/01/2017	\$38.50	\$7.70	\$14.75	\$0.00	\$60.95
	06/01/2018	\$39.45	\$7.70	\$14.75	\$0.00	\$61.90
	12/01/2018	\$40.40	\$7.70	\$14.75	\$0.00	\$62.85
	06/01/2019	\$41.40	\$7.70	\$14.75	\$0.00	\$63.85
	12/01/2019	\$42.40	\$7.70	\$14.75	\$0.00	\$64.85
	06/01/2020	\$43.39	\$7.70	\$14.75	\$0.00	\$65.84
	12/01/2020	\$44.37	\$7.70	\$14.75	\$0.00	\$66.82
	06/01/2021	\$45.39	\$7.70	\$14.75	\$0.00	\$67.84
	12/01/2021	\$46.40	\$7.70	\$14.75	\$0.00	\$68.85
For apprentice rates see "Apprentice- LABORER"						
POWER SHOVEL/DERRICK/TRENCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2017	\$46.63	\$10.50	\$15.50	\$0.00	\$72.63
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (CONCRETE) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2017	\$46.63	\$10.50	\$15.50	\$0.00	\$72.63
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (DEWATERING, OTHER) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2017	\$31.80	\$10.50	\$15.50	\$0.00	\$57.80
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
READY MIX CONCRETE DRIVERS after 4/30/10 (Drivers Hired After 4/30/2010) <i>TEAMSTERS LOCAL 25c</i>	07/01/2017	\$28.18	\$8.48	\$9.72	\$0.00	\$46.38
READY-MIX CONCRETE DRIVER <i>TEAMSTERS LOCAL 25c</i>	07/01/2017	\$29.48	\$8.48	\$9.72	\$0.00	\$47.68
RECLAIMERS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2017	\$46.17	\$10.50	\$15.50	\$0.00	\$72.17
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
RIDE-ON MOTORIZED BUGGY OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2017	\$37.75	\$7.70	\$14.75	\$0.00	\$60.20
	06/01/2018	\$38.70	\$7.70	\$14.75	\$0.00	\$61.15
	12/01/2018	\$39.65	\$7.70	\$14.75	\$0.00	\$62.10
	06/01/2019	\$40.65	\$7.70	\$14.75	\$0.00	\$63.10
	12/01/2019	\$41.65	\$7.70	\$14.75	\$0.00	\$64.10
	06/01/2020	\$42.64	\$7.70	\$14.75	\$0.00	\$65.09
	12/01/2020	\$43.62	\$7.70	\$14.75	\$0.00	\$66.07
	06/01/2021	\$44.64	\$7.70	\$14.75	\$0.00	\$67.09
	12/01/2021	\$45.65	\$7.70	\$14.75	\$0.00	\$68.10
For apprentice rates see "Apprentice- LABORER"						
ROLLER/SPREADER/MULCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2017	\$46.17	\$10.50	\$15.50	\$0.00	\$72.17
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
ROOFER (Inc.Roofing Waterproofing &Roofing Damproofg) <i>ROOFERS LOCAL 33</i>	02/01/2018	\$42.36	\$11.35	\$14.80	\$0.00	\$68.51
	08/01/2018	\$43.46	\$11.35	\$14.80	\$0.00	\$69.61
	02/01/2019	\$44.61	\$11.35	\$14.80	\$0.00	\$70.76

Apprentice - ROOFER - Local 33

Effective Date - 02/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.18	\$11.35	\$3.44	\$0.00	\$35.97
2	60	\$25.42	\$11.35	\$14.80	\$0.00	\$51.57
3	65	\$27.53	\$11.35	\$14.80	\$0.00	\$53.68
4	75	\$31.77	\$11.35	\$14.80	\$0.00	\$57.92
5	85	\$36.01	\$11.35	\$14.80	\$0.00	\$62.16

Effective Date - 08/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.73	\$11.35	\$3.44	\$0.00	\$36.52
2	60	\$26.08	\$11.35	\$14.80	\$0.00	\$52.23
3	65	\$28.25	\$11.35	\$14.80	\$0.00	\$54.40
4	75	\$32.60	\$11.35	\$14.80	\$0.00	\$58.75
5	85	\$36.94	\$11.35	\$14.80	\$0.00	\$63.09

Notes: ** 1:5, 2:6-10, the 1:10; Reroofing: 1:4, then 1:1
Step 1 is 2000 hrs.; Steps 2-5 are 1000 hrs.
(Hot Pitch Mechanics' receive \$1.00 hr. above ROOFER)

Apprentice to Journeyworker Ratio:**

ROOFER SLATE / TILE / PRECAST CONCRETE <i>ROOFERS LOCAL 33</i>	02/01/2018	\$42.61	\$11.35	\$14.80	\$0.00	\$68.76
	08/01/2018	\$43.71	\$11.35	\$14.80	\$0.00	\$69.86
	02/01/2019	\$44.86	\$11.35	\$14.80	\$0.00	\$71.01
For apprentice rates see "Apprentice- ROOFER"						
SHEETMETAL WORKER <i>SHEETMETAL WORKERS LOCAL 17 - A</i>	02/01/2018	\$44.11	\$12.20	\$24.12	\$2.41	\$82.84

Classification

Effective Date Base Wage Health Pension Supplemental
Unemployment Total Rate

Apprentice - SHEET METAL WORKER - Local 17-A
Effective Date - 02/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$17.64	\$12.20	\$5.61	\$0.00	\$35.45
2	40	\$17.64	\$12.20	\$5.61	\$0.00	\$35.45
3	45	\$19.85	\$12.20	\$10.85	\$1.29	\$44.19
4	45	\$19.85	\$12.20	\$10.85	\$1.29	\$44.19
5	50	\$22.06	\$12.20	\$11.80	\$1.38	\$47.44
6	50	\$22.06	\$12.20	\$12.05	\$1.39	\$47.70
7	60	\$26.47	\$12.20	\$13.70	\$1.57	\$53.94
8	65	\$28.67	\$12.20	\$14.65	\$1.67	\$57.19
9	75	\$33.08	\$12.20	\$16.56	\$1.86	\$63.70
10	85	\$37.49	\$12.20	\$17.96	\$2.03	\$69.68

Notes:

Steps are 6 mos.

Apprentice to Journeyworker Ratio:1:4

SIGN ERECTOR	06/01/2013	\$25.81	\$7.07	\$7.05	\$0.00	\$39.93
PAINTERS LOCAL 35 - ZONE 2						

Apprentice - SIGN ERECTOR - Local 35 Zone 2
Effective Date - 06/01/2013

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$12.91	\$7.07	\$0.00	\$0.00	\$19.98
2	55	\$14.20	\$7.07	\$2.45	\$0.00	\$23.72
3	60	\$15.49	\$7.07	\$2.45	\$0.00	\$25.01
4	65	\$16.78	\$7.07	\$2.45	\$0.00	\$26.30
5	70	\$18.07	\$7.07	\$7.05	\$0.00	\$32.19
6	75	\$19.36	\$7.07	\$7.05	\$0.00	\$33.48
7	80	\$20.65	\$7.07	\$7.05	\$0.00	\$34.77
8	85	\$21.94	\$7.07	\$7.05	\$0.00	\$36.06
9	90	\$23.23	\$7.07	\$7.05	\$0.00	\$37.35

Notes:

Steps are 4 mos.

Apprentice to Journeyworker Ratio:1:1

SPECIALIZED EARTH MOVING EQUIP < 35 TONS	12/01/2016	\$33.54	\$10.91	\$10.89	\$0.00	\$55.34
TEAMSTERS JOINT COUNCIL NO. 10 ZONE A						
SPECIALIZED EARTH MOVING EQUIP > 35 TONS	12/01/2016	\$33.83	\$10.91	\$10.89	\$0.00	\$55.63
TEAMSTERS JOINT COUNCIL NO. 10 ZONE A						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
SPRINKLER FITTER	03/01/2018	\$57.78	\$9.12	\$18.15	\$0.00	\$85.05
<i>SPRINKLER FITTERS LOCAL 550 - (Section A) Zone 1</i>	10/01/2018	\$59.28	\$9.12	\$18.15	\$0.00	\$86.55
	01/01/2019	\$59.28	\$9.47	\$18.35	\$0.00	\$87.10
	03/01/2019	\$60.78	\$9.47	\$18.35	\$0.00	\$88.60
	10/01/2019	\$62.28	\$9.47	\$18.35	\$0.00	\$90.10
	03/01/2020	\$63.78	\$9.47	\$18.35	\$0.00	\$91.60
	10/01/2020	\$65.28	\$9.47	\$18.35	\$0.00	\$93.10
	03/01/2021	\$66.78	\$9.47	\$18.35	\$0.00	\$94.60

Apprentice - SPRINKLER FITTER - Local 550 (Section A) Zone 1

Effective Date - 03/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$20.22	\$9.12	\$8.90	\$0.00	\$38.24
2	40	\$23.11	\$9.12	\$8.90	\$0.00	\$41.13
3	45	\$26.00	\$9.12	\$8.90	\$0.00	\$44.02
4	50	\$28.89	\$9.12	\$8.90	\$0.00	\$46.91
5	55	\$31.78	\$9.12	\$8.90	\$0.00	\$49.80
6	60	\$34.67	\$9.12	\$10.40	\$0.00	\$54.19
7	65	\$37.56	\$9.12	\$10.40	\$0.00	\$57.08
8	70	\$40.45	\$9.12	\$10.40	\$0.00	\$59.97
9	75	\$43.34	\$9.12	\$10.40	\$0.00	\$62.86
10	80	\$46.22	\$9.12	\$10.40	\$0.00	\$65.74

Effective Date - 10/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$20.75	\$9.12	\$8.90	\$0.00	\$38.77
2	40	\$23.71	\$9.12	\$8.90	\$0.00	\$41.73
3	45	\$26.68	\$9.12	\$8.90	\$0.00	\$44.70
4	50	\$29.64	\$9.12	\$8.90	\$0.00	\$47.66
5	55	\$32.60	\$9.12	\$8.90	\$0.00	\$50.62
6	60	\$35.57	\$9.12	\$10.40	\$0.00	\$55.09
7	65	\$38.53	\$9.12	\$10.40	\$0.00	\$58.05
8	70	\$41.50	\$9.12	\$10.40	\$0.00	\$61.02
9	75	\$44.46	\$9.12	\$10.40	\$0.00	\$63.98
10	80	\$47.42	\$9.12	\$10.40	\$0.00	\$66.94

Notes: Apprentice entered prior 9/30/10;
40/45/50/55/60/65/70/75/80/85
Steps are 850 hours

Apprentice to Journeyworker Ratio:1:3

STEAM BOILER OPERATOR	12/01/2017	\$46.17	\$10.50	\$15.50	\$0.00	\$72.17
<i>OPERATING ENGINEERS LOCAL 4</i>						
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
TAMPERS, SELF-PROPELLED OR TRACTOR DRAWN	12/01/2017	\$46.17	\$10.50	\$15.50	\$0.00	\$72.17
<i>OPERATING ENGINEERS LOCAL 4</i>						
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TELECOMMUNICATION TECHNICIAN	03/01/2018	\$37.61	\$13.00	\$15.93	\$0.00	\$66.54
<i>ELECTRICIANS LOCAL 103</i>	09/01/2018	\$38.51	\$13.00	\$15.96	\$0.00	\$67.47
	03/01/2019	\$39.40	\$13.00	\$15.98	\$0.00	\$68.38

Apprentice - TELECOMMUNICATION TECHNICIAN - Local 103

Effective Date - 03/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$15.04	\$13.00	\$0.45	\$0.00	\$28.49
2	40	\$15.04	\$13.00	\$0.45	\$0.00	\$28.49
3	45	\$16.92	\$13.00	\$12.74	\$0.00	\$42.66
4	45	\$16.92	\$13.00	\$12.74	\$0.00	\$42.66
5	50	\$18.81	\$13.00	\$13.03	\$0.00	\$44.84
6	55	\$20.69	\$13.00	\$13.32	\$0.00	\$47.01
7	60	\$22.57	\$13.00	\$13.61	\$0.00	\$49.18
8	65	\$24.45	\$13.00	\$13.90	\$0.00	\$51.35
9	70	\$26.33	\$13.00	\$14.19	\$0.00	\$53.52
10	75	\$28.21	\$13.00	\$14.48	\$0.00	\$55.69

Effective Date - 09/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$15.40	\$13.00	\$0.46	\$0.00	\$28.86
2	40	\$15.40	\$13.00	\$0.46	\$0.00	\$28.86
3	45	\$17.33	\$13.00	\$12.75	\$0.00	\$43.08
4	45	\$17.33	\$13.00	\$12.75	\$0.00	\$43.08
5	50	\$19.26	\$13.00	\$13.05	\$0.00	\$45.31
6	55	\$21.18	\$13.00	\$13.34	\$0.00	\$47.52
7	60	\$23.11	\$13.00	\$13.62	\$0.00	\$49.73
8	65	\$25.03	\$13.00	\$13.92	\$0.00	\$51.95
9	70	\$26.96	\$13.00	\$14.21	\$0.00	\$54.17
10	75	\$28.88	\$13.00	\$14.50	\$0.00	\$56.38

Notes:

Apprentice to Journeyworker Ratio:1:1

TERRAZZO FINISHERS	02/01/2018	\$51.00	\$10.75	\$20.03	\$0.00	\$81.78
<i>BRICKLAYERS LOCAL 3 - MARBLE & TILE</i>	08/01/2018	\$52.35	\$10.75	\$20.16	\$0.00	\$83.26
	02/01/2019	\$52.99	\$10.75	\$20.16	\$0.00	\$83.90
	08/01/2019	\$54.34	\$10.75	\$20.30	\$0.00	\$85.39
	02/01/2020	\$54.98	\$10.75	\$20.30	\$0.00	\$86.03
	08/01/2020	\$56.33	\$10.75	\$20.45	\$0.00	\$87.53
	02/01/2021	\$56.97	\$10.75	\$20.45	\$0.00	\$88.17
	08/01/2021	\$58.37	\$10.75	\$20.61	\$0.00	\$89.73
	02/01/2022	\$58.96	\$10.75	\$20.61	\$0.00	\$90.32

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
----------------	----------------	-----------	--------	---------	------------------------------	------------

Apprentice - TERRAZZO FINISHER - Local 3 Marble & Tile

Effective Date - 02/01/2018

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.50	\$10.75	\$20.03	\$0.00	\$56.28
2	60	\$30.60	\$10.75	\$20.03	\$0.00	\$61.38
3	70	\$35.70	\$10.75	\$20.03	\$0.00	\$66.48
4	80	\$40.80	\$10.75	\$20.03	\$0.00	\$71.58
5	90	\$45.90	\$10.75	\$20.03	\$0.00	\$76.68

Notes:

Apprentice to Journeyworker Ratio:1:3

TEST BORING DRILLER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2017	\$38.85	\$7.70	\$14.95	\$0.00	\$61.50
	06/01/2018	\$39.80	\$7.70	\$14.95	\$0.00	\$62.45
	12/01/2018	\$40.75	\$7.70	\$14.95	\$0.00	\$63.40
	06/01/2019	\$41.75	\$7.70	\$14.95	\$0.00	\$64.40
	12/01/2019	\$42.75	\$7.70	\$14.95	\$0.00	\$65.40
	06/01/2020	\$43.74	\$7.70	\$14.95	\$0.00	\$66.39
	12/01/2020	\$44.72	\$7.70	\$14.95	\$0.00	\$67.37
	06/01/2021	\$45.74	\$7.70	\$14.95	\$0.00	\$68.39
	12/01/2021	\$46.75	\$7.70	\$14.95	\$0.00	\$69.40
For apprentice rates see "Apprentice- LABORER"						
TEST BORING DRILLER HELPER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2017	\$37.57	\$7.70	\$14.95	\$0.00	\$60.22
	06/01/2018	\$38.52	\$7.70	\$14.95	\$0.00	\$61.17
	12/01/2018	\$39.47	\$7.70	\$14.95	\$0.00	\$62.12
	06/01/2019	\$40.47	\$7.70	\$14.95	\$0.00	\$63.12
	12/01/2019	\$41.47	\$7.70	\$14.95	\$0.00	\$64.12
	06/01/2020	\$42.46	\$7.70	\$14.95	\$0.00	\$65.11
	12/01/2020	\$43.44	\$7.70	\$14.95	\$0.00	\$66.09
	06/01/2021	\$44.46	\$7.70	\$14.95	\$0.00	\$67.11
	12/01/2021	\$45.47	\$7.70	\$14.95	\$0.00	\$68.12
For apprentice rates see "Apprentice- LABORER"						
TEST BORING LABORER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2017	\$37.45	\$7.70	\$14.95	\$0.00	\$60.10
	06/01/2018	\$38.40	\$7.70	\$14.95	\$0.00	\$61.05
	12/01/2018	\$39.35	\$7.70	\$14.95	\$0.00	\$62.00
	06/01/2019	\$40.35	\$7.70	\$14.95	\$0.00	\$63.00
	12/01/2019	\$41.35	\$7.70	\$14.95	\$0.00	\$64.00
	06/01/2020	\$42.34	\$7.70	\$14.95	\$0.00	\$64.99
	12/01/2020	\$43.32	\$7.70	\$14.95	\$0.00	\$65.97
	06/01/2021	\$44.34	\$7.70	\$14.95	\$0.00	\$66.99
	12/01/2021	\$45.35	\$7.70	\$14.95	\$0.00	\$68.00
For apprentice rates see "Apprentice- LABORER"						
TRACTORS/PORTABLE STEAM GENERATORS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2017	\$46.17	\$10.50	\$15.50	\$0.00	\$72.17

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
TRAILERS FOR EARTH MOVING EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2016	\$34.12	\$10.91	\$10.89	\$0.00	\$55.92
TUNNEL WORK - COMPRESSED AIR <i>LABORERS (COMPRESSED AIR)</i>	12/01/2017	\$49.73	\$7.70	\$15.35	\$0.00	\$72.78
	06/01/2018	\$50.68	\$7.70	\$15.35	\$0.00	\$73.73
	12/01/2018	\$51.63	\$7.70	\$15.35	\$0.00	\$74.68
	06/01/2019	\$52.63	\$7.70	\$15.35	\$0.00	\$75.68
	12/01/2019	\$53.63	\$7.70	\$15.35	\$0.00	\$76.68
	06/01/2020	\$54.62	\$7.70	\$15.35	\$0.00	\$77.67
	12/01/2020	\$55.60	\$7.70	\$15.35	\$0.00	\$78.65
	06/01/2021	\$56.62	\$7.70	\$15.35	\$0.00	\$79.67
	12/01/2021	\$57.63	\$7.70	\$15.35	\$0.00	\$80.68
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - COMPRESSED AIR (HAZ. WASTE) <i>LABORERS (COMPRESSED AIR)</i>	12/01/2017	\$51.73	\$7.70	\$15.35	\$0.00	\$74.78
	06/01/2018	\$52.68	\$7.70	\$15.35	\$0.00	\$75.73
	12/01/2018	\$53.63	\$7.70	\$15.35	\$0.00	\$76.68
	06/01/2019	\$54.63	\$7.70	\$15.35	\$0.00	\$77.68
	12/01/2019	\$55.63	\$7.70	\$15.35	\$0.00	\$78.68
	06/01/2020	\$56.62	\$7.70	\$15.35	\$0.00	\$79.67
	12/01/2020	\$57.60	\$7.70	\$15.35	\$0.00	\$80.65
	06/01/2021	\$58.62	\$7.70	\$15.35	\$0.00	\$81.67
	12/01/2021	\$59.63	\$7.70	\$15.35	\$0.00	\$82.68
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR <i>LABORERS (FREE AIR TUNNEL)</i>	12/01/2017	\$41.80	\$7.70	\$15.35	\$0.00	\$64.85
	06/01/2018	\$42.75	\$7.70	\$15.35	\$0.00	\$65.80
	12/01/2018	\$43.70	\$7.70	\$15.35	\$0.00	\$66.75
	06/01/2019	\$44.70	\$7.70	\$15.35	\$0.00	\$67.75
	12/01/2019	\$45.70	\$7.70	\$15.35	\$0.00	\$68.75
	06/01/2020	\$46.69	\$7.70	\$15.35	\$0.00	\$69.74
	12/01/2020	\$47.67	\$7.70	\$15.35	\$0.00	\$70.72
	06/01/2021	\$48.69	\$7.70	\$15.35	\$0.00	\$71.74
	12/01/2021	\$49.70	\$7.70	\$15.35	\$0.00	\$72.75
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR (HAZ. WASTE) <i>LABORERS (FREE AIR TUNNEL)</i>	12/01/2017	\$43.80	\$7.70	\$15.35	\$0.00	\$66.85
	06/01/2018	\$44.75	\$7.70	\$15.35	\$0.00	\$67.80
	12/01/2018	\$45.70	\$7.70	\$15.35	\$0.00	\$68.75
	06/01/2019	\$46.70	\$7.70	\$15.35	\$0.00	\$69.75
	12/01/2019	\$47.70	\$7.70	\$15.35	\$0.00	\$70.75
	06/01/2020	\$48.69	\$7.70	\$15.35	\$0.00	\$71.74
	12/01/2020	\$49.67	\$7.70	\$15.35	\$0.00	\$72.72
	06/01/2021	\$50.69	\$7.70	\$15.35	\$0.00	\$73.74
	12/01/2021	\$51.70	\$7.70	\$15.35	\$0.00	\$74.75
For apprentice rates see "Apprentice- LABORER"						
VAC-HAUL <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</i>	12/01/2016	\$33.54	\$10.91	\$10.89	\$0.00	\$55.34

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
WAGON DRILL OPERATOR <i>LABORERS - ZONE 1</i>	12/01/2017	\$37.75	\$7.70	\$14.75	\$0.00	\$60.20
	06/01/2018	\$38.70	\$7.70	\$14.75	\$0.00	\$61.15
	12/01/2018	\$39.65	\$7.70	\$14.75	\$0.00	\$62.10
	06/01/2019	\$40.65	\$7.70	\$14.75	\$0.00	\$63.10
	12/01/2019	\$41.65	\$7.70	\$14.75	\$0.00	\$64.10
	06/01/2020	\$42.64	\$7.70	\$14.75	\$0.00	\$65.09
	12/01/2020	\$43.62	\$7.70	\$14.75	\$0.00	\$66.07
	06/01/2021	\$44.64	\$7.70	\$14.75	\$0.00	\$67.09
	12/01/2021	\$45.65	\$7.70	\$14.75	\$0.00	\$68.10
For apprentice rates see "Apprentice- LABORER"						
WASTE WATER PUMP OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2017	\$46.63	\$10.50	\$15.50	\$0.00	\$72.63
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
WATER METER INSTALLER <i>PLUMBERS & GASFITTERS LOCAL 12</i>	03/01/2018	\$54.69	\$11.57	\$15.76	\$0.00	\$82.02
	09/01/2018	\$56.19	\$11.57	\$15.76	\$0.00	\$83.52
	03/01/2019	\$57.69	\$11.57	\$15.76	\$0.00	\$85.02
	09/01/2019	\$59.19	\$11.57	\$15.76	\$0.00	\$86.52
	03/01/2020	\$60.69	\$11.57	\$15.76	\$0.00	\$88.02
	09/01/2020	\$62.19	\$11.57	\$15.76	\$0.00	\$89.52
	03/01/2021	\$63.69	\$11.57	\$15.76	\$0.00	\$91.02
For apprentice rates see "Apprentice- PLUMBER/PIPEFITTER" or "PLUMBER/GASFITTER"						
Outside Electrical - East						
CABLE TECHNICIAN (Power Zone) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/03/2017	\$27.14	\$7.75	\$1.81	\$0.00	\$36.70
For apprentice rates see "Apprentice- LINEMAN"						
CABLEMAN (Underground Ducts & Cables) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/03/2017	\$38.45	\$7.75	\$9.53	\$0.00	\$55.73
For apprentice rates see "Apprentice- LINEMAN"						
DRIVER / GROUNDMAN CDL <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/03/2017	\$31.66	\$7.75	\$9.44	\$0.00	\$48.85
For apprentice rates see "Apprentice- LINEMAN"						
DRIVER / GROUNDMAN -Inexperienced (<2000 Hrs) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/03/2017	\$24.88	\$7.75	\$1.75	\$0.00	\$34.38
For apprentice rates see "Apprentice- LINEMAN"						
EQUIPMENT OPERATOR (Class A CDL) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/03/2017	\$38.45	\$7.75	\$13.61	\$0.00	\$59.81
For apprentice rates see "Apprentice- LINEMAN"						
EQUIPMENT OPERATOR (Class B CDL) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/03/2017	\$33.92	\$7.75	\$10.21	\$0.00	\$51.88
For apprentice rates see "Apprentice- LINEMAN"						
GROUNDMAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/03/2017	\$24.88	\$7.75	\$1.75	\$0.00	\$34.38
For apprentice rates see "Apprentice- LINEMAN"						
GROUNDMAN -Inexperienced (<2000 Hrs.) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/03/2017	\$20.35	\$7.75	\$1.61	\$0.00	\$29.71
For apprentice rates see "Apprentice- LINEMAN"						
JOURNEYMAN LINEMAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	09/03/2017	\$45.23	\$7.75	\$16.61	\$0.00	\$69.59

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
----------------	----------------	-----------	--------	---------	---------------------------	------------

Apprentice - LINEMAN (Outside Electrical) - East Local 104

Effective Date - 09/03/2017

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$27.14	\$7.75	\$3.31	\$0.00	\$38.20
2	65	\$29.40	\$7.75	\$3.38	\$0.00	\$40.53
3	70	\$31.66	\$7.75	\$3.45	\$0.00	\$42.86
4	75	\$33.92	\$7.75	\$5.02	\$0.00	\$46.69
5	80	\$36.18	\$7.75	\$5.09	\$0.00	\$49.02
6	85	\$38.45	\$7.75	\$5.15	\$0.00	\$51.35
7	90	\$40.71	\$7.75	\$7.22	\$0.00	\$55.68

Notes:

Apprentice to Journeyworker Ratio:1:2

TELEDATA CABLE SPLICER <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	01/01/2016	\$28.98	\$4.25	\$3.12	\$0.00	\$36.35
TELEDATA LINEMAN/EQUIPMENT OPERATOR <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	01/01/2016	\$27.31	\$4.25	\$3.07	\$0.00	\$34.63
TELEDATA WIREMAN/INSTALLER/TECHNICIAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	01/01/2016	\$27.31	\$4.25	\$3.07	\$0.00	\$34.63
TREE TRIMMER <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	01/31/2016	\$18.51	\$3.55	\$0.00	\$0.00	\$22.06
<p>This classification applies only to tree work done: (a) for a utility company, R.E.A. cooperative, or railroad or coal mining company, and (b) for the purpose of operating, maintaining, or repairing the utility company's equipment, and (c) by a person who is using hand or mechanical cutting methods and is not on the ground.</p> <p>This classification does not apply to wholesale tree removal.</p>						
TREE TRIMMER GROUNDMAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	01/31/2016	\$16.32	\$3.55	\$0.00	\$0.00	\$19.87
<p>This classification applies only to tree work done: (a) for a utility company, R.E.A. cooperative, or railroad or coal mining company, and (b) for the purpose of operating, maintaining, or repairing the utility company's equipment, and (c) by a person who is using hand or mechanical cutting methods and is on the ground. This classification does not apply to wholesale tree removal.</p>						

Additional Apprentice Information:

Minimum wage rates for apprentices employed on public works projects are listed above as a percentage of the pre-determined hourly wage rate established by the Commissioner under the provisions of the M.G.L. c. 149, ss. 26-27D. Apprentice ratios are established by the Division of Apprenticeship Training pursuant to M.G.L. c. 23, ss. 11E-11L.

All apprentices must be registered with the Division of Apprenticeship Training in accordance with M.G.L. c. 23, ss. 11E-11L.

All steps are six months (1000 hours.)

Ratios are expressed in allowable number of apprentices to journeymen or fraction thereof, unless otherwise specified.

** Multiple ratios are listed in the comment field.

*** APP to JM; 1:1, 2:2, 2:3, 3:4, 4:4, 4:5, 4:6, 5:7, 6:7, 6:8, 6:9, 7:10, 8:10, 8:11, 8:12, 9:13, 10:13, 10:14, etc.

**** APP to JM; 1:1, 1:2, 2:3, 2:4, 3:5, 4:6, 4:7, 5:8, 6:9, 6:10, 7:11, 8:12, 8:13, 9:14, 10:15, 10:16, etc.